THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

[REGISTERED AS A NEWSPAPER.]

VOL. XXIII. No. 560.] LONDON, FEBRUARY 3, 1874. [26TH YEAR.] Price 6d.

RAMSAY'S NEWCASTLE CANNEL COAL. Analysis—10,000 cubic feet of gas per ton of coal; 26-candle gas; 13¼ cwt. coke per ton of coal.
The London Exhibition in 1851 was lighted with gas made from Ramsay's Cannel.
RAMSAY'S PATENT CONDENSED COKE.
DO. GARESFIELD COKE.

RAMSAY'S FIRE-CLAY ARTICLES.
GAS-RETORTS, introduced 1828. FIRE-BRICK WORKS, established 1804. FIRE-CLAY SANITARY PIPES, CHIMNEY-TOPS, and all Goods made of Fire-Clay. The Fire-Clay is worked from Blaydon Main Colliery, is of excellent quality, and no expense spared in perfecting every article. The FIRE-BRICKS (marked "RAMSAY") are to be seen in all parts of the world, and the Works are the most extensive in the Kingdom.
Manufactories—Derwenthaugh, Swalwell, and Hebburn Quay, near Newcastle-on-Tyne; and London Wharves—Falcon Wharf, No. 80, Bankside; and Honduras Wharf, Cubit Town. Large stocks kept.
Address G. H. RAMSAY, NEWCASTLE-ON-TYNE.

GENUINE TORBAY PAINT
AND ANTI-GALVANIC PAINT.
TWO PRIZE MEDALS.
WORKS: BRIXHAM TORBAY.
These Paints are now used in 100 Country Gas-Works, and by all (but one) of the London Gas Companies, on Gasholders, Scrubbers, Purifiers, &c. They will cover tar effectually. Also used by the Admiralty, War Office, Railway Companies, Founders, &c.
They prevent and arrest rust, and protect iron from the action of water, sulphurous and gaseous exhalations.
The covering powers are considerably greater than those of any other oxide Paint.—*See "Engineer," Nov.* 2, 1866.
STEVENS AND CO.,
London Office, 21, Great Winchester Street, E.C.

HENRY SKOINES,
PATENTEE & CONTRACTING GAS ENGINEER
FOR SETTING RETORTS,
ERECTING AND REMODELLING
GAS-WORKS OF ANY EXTENT,
AT HOME OR ABROAD.
ADDRESS—
7, ARGYLE ST., KING'S CROSS, LONDON, W.C.

COWEN'S PATENT FIRE-CLAY RETORTS.
JOSEPH COWEN and CO.,
BLAYDON BURN, BLAYDON-ON-TYNE,
Were the only parties to whom a PRIZE MEDAL was awarded at the GREAT EXHIBITION of 1851, for "GAS-RETORTS and OTHER OBJECTS in FIRE-CLAY," and they were also awarded at the INTERNATIONAL EXHIBITION of 1862, the PRIZE MEDAL for "GAS-RETORTS, FIRE-BRICKS, &c., for EXCELLENCE of QUALITY."
J. C. and Co. have been for many years the most extensive Manufacturers of Fire-Clay Retorts and Fire-Bricks in the Kingdom. Orders for Fire-Clay Retorts of all shapes and dimensions, and to fit any shaped Mouthpiece, Fire-Bricks, and every other article in Fire-Clay, are promptly executed at their Works as above.
COWEN'S GARESFIELD COALS.
Coal Office,
QUAY SIDE, NEWCASTLE-ON-TYNE.
JOS. COWEN & Co. are the only Manufacturers of FIRE-BRICKS and CLAY RETORTS at BLAYDON BURN.

JOHN RUSSELL AND CO.,
THE OLD TUBE-WORKS, WEDNESBURY
AND
THE ALMA WORKS, WALSALL.
Established at the commencement of Gas Lighting.
WAREHOUSES:
69, UPPER THAMES STREET;
COMMERCIAL STREET, SPITALFIELDS;
5, CHARLES STREET, SOHO; and
16, SOHO SQUARE, } LONDON
35, 36, 37, & 39, GRANBY ROW, MANCHESTER.
J. R. and Co. are the original manufacturers of Wrought-Iron Gas Tubes and Fittings, and Inventors of the LAP-WELDED TUBES for Locomotive and Marine Boilers.
J. R. and Co. make all kinds of Tubes and Fittings for Gas, Steam, and Water; Gun-Metal Cocks, Stocks, and Dies; Galvanized Tubes and High-Pressure Tubes, &c.
Lists may be obtained on application to
69, UPPER THAMES STREET, LONDON.

JOHN BENT & SON,
BELL BARN ROAD, BIRMINGHAM,
MANUFACTURERS OF
WET AND DRY GAS-METERS,
OF
FIRST-CLASS MATERIALS & WORKMANSHIP;
Also, STATION-METERS, PRESSURE-GAUGES, STREET-LAMPS, REGULATORS, &c.
ESTABLISHED 1830.

THOMAS PIGGOTT & CO.,
SPRING HILL, BIRMINGHAM.
MANUFACTURERS OF
TELESCOPIC & SINGLE GASHOLDERS,
CAST & WROUGHT IRON TANKS FOR DITTO,
And Gas Apparatus of every Description.
Marine, Tubular, Cornish, Plain, Furnace, Saddle, and Range Boilers.
SUGAR, SALTPETRE, AND ALL KINDS OF PANS.
Roofs, Girders, and Bridges, and General Smith's Work.
LONDON AGENT—W. G. DAVIS, 2, Brabant Court, Philpot Lane, E.C.

SCOTTISH CANNEL COAL.
J. & W. ROMANS, Consulting Gas Engineers and Coal Factors, of Edinburgh and London, CONTRACT for supplying any quantity of COAL and CANNEL.
They are also Contractors for leasing Gas-Works, for supplying, erecting, or repairing gas apparatus and fire-clay goods.
Messrs. ROMANS, being lessees of several Gas-Works, have their Cannels tested in the ordinary working process, thus securing for their customers a guarantee beyond mere laboratory experiments.
Analysis, prices, and other information will be forwarded on application to their Offices, 8, Forth Street, EDINBURGH; 1, Walbrook, Mansion House, LONDON, or to the "Crown Wharf," Thomas Street, Limehouse, LONDON, where stocks of house, steam, and gas coal are always on hand.
Coal, machinery, fire goods, &c., shipped to all parts of the world.

THE
DUKE OF HAMILTON'S
LESMAHAGOW
CANNEL COAL.

AGENT:
JAMES M'KELVIE,
HAYMARKET,
EDINBURGH.

GEORGE GLOVER & CO.,

PATENTEES OF THE
NATIONAL STANDARD GASOMETERS
For the English Government, and for the Government of the Netherlands;
MAKERS OF THE DUPLICATE COPY
Presented by Her Majesty's Government to the French Government;
AND MANUFACTURERS OF
IMPROVED
DRY GAS-METERS,
Warranted to Measure correctly, and not to vary.
RANELAGH WORKS, RANELAGH ROAD, PIMLICO, LONDON, S.W.;
236, GEORGE STREET, GLASGOW; AND 15, MARKET STREET, MANCHESTER.

G. G. and Co. have just received the only Medal awarded for Gas-Meters at the Vienna International Exhibition.

SILVER MEDAL, PARIS EXHIBITION, 1867.

LLOYD AND LLOYD,

ALBION TUBE-WORKS, BIRMINGHAM,

MANUFACTURERS OF

WROUGHT-IRON TUBES AND FITTINGS

AND

LAP-WELDED IRON AND HOMOGENEOUS METAL BOILER TUBES.

Boiler-Tube Ferrules, Gun-Metal Gland Cocks, Water-Gauges, Whistles, &c.; Stocks, Taps, and Dies for Screwing, and Gas-Fitters Tools.

London Offices: No. 4, Cloak Lane, Queen Street, E.C.

WAREHOUSES:

LONDON: 157, UPPER THAMES STREET, E.C.

LIVERPOOL: No. 63, Paradise Street.
MANCHESTER: Barlow's Croft, Chapel Street, Salford.
PARIS: No. 38, Rue du Chateau d'Eau.
LILLE: No. 38, Rue Grande Chaussee.

DANIEL HOWARD,

Successor to the late BENJAMIN WHITEHOUSE,

(ESTABLISHED IN 1765,)

BOILER AND GASHOLDER WORKS,

Westbromwich, near Birmingham.

MANUFACTURER OF TELESCOPE AND SINGLE GASHOLDERS,

WROUGHT & CAST IRON TANKS

FOR DITTO,

PURIFIERS, CONDENSERS, SCRUBBERS, HYDRAULIC MAINS,

And all kinds of GAS APPARATUS.

Wrought-Iron Roofs, Bridges, and Girders; Steam, Hot Water, and Range Boilers; Tanks, Cisterns, &c.,

And all kinds of Wrought-Iron Work.

DRAWINGS, SPECIFICATIONS, and ESTIMATES FURNISHED.

LAMBERT BROTHERS, WALSALL.

ALPHA TUBE & FITTING WORKS

HENRY HOWARD & CO.,

COOMBS WOOD PATENT TUBE-WORKS.

OLD HILL, near DUDLEY,

MANUFACTURERS OF

HOWARD'S PATENT IMPROVED WROUGHT-IRON TUBES,

FOR GAS, STEAM, AND WATER;

Also **ORDINARY WELDED WROUGHT-IRON TUBES and FITTINGS,**

FOR GAS, STEAM, & WATER, EITHER BLACK, GALVANIZED, OR ENAMELLED.

CORE BARS FOR IRONFOUNDERS, STOCKS, TAPS, AND DIES, IRON COCKS, &c.

London Agent—W. G. DAVIS, 2, Brabant Court, Philpot Lane, E.C.

D. BRUCE PEEBLES & CO.,

ENGINEERS, BRASSFOUNDERS, AND GAS-METER MANUFACTURERS,

FOUNTAINBRIDGE WORKS, EDINBURGH.

CONSUMERS WET METERS,

IMPROVED DRY METERS, STATION-METERS, GOVERNORS.

PATENT LAMP-REGULATORS,

EXPERIMENTING METERS, PRESSURE-GAUGES, &c.

LIME SUPERSEDED
IN THE
PURIFICATION OF ILLUMINATING GAS,
BY
Spence's Patent Dry Copperas,

The only Purifying Material which removes, by one process, all Ammonia and Sulphuretted Hydrogen. It has been in use for upwards of four years at some of the largest Gas-Works in the Kingdom.

TESTIMONIALS SENT ON APPLICATION.

SPENCE BROTHERS CHEMICAL COMPANY, LIMITED,
VICTORIA CHEMICAL WORKS, ASHTON NEW ROAD, BRADFORD, MANCHESTER,
Manufacturers of SPENCE'S PATENT DRY COPPERAS; GREEN COPPERAS;
SPENCE'S PATENT GAS DEODORIZER;
SULPHATE OF AMMONIA, GREY AND BROWN; SULPHURIC ACID; MUDIE'S DISINFECTANT, &c.
CONTRACTORS FOR THE PURCHASE OF SPENT OXIDE.
ALL COMMUNICATIONS TO BE ADDRESSED TO THE WORKS.

Established

1795.

JOSEPH CLIFF & SON,
THE ORIGINAL
WORTLEY FIRE-BRICK WORKS,
NEAR LEEDS,
MANUFACTURERS OF ALL DESCRIPTIONS OF
FIRE GOODS, and Salt-Glazed Drain-Pipes.
LONDON WHARF:
Wharf No. 4, inside Great Northern Goods Station, King's Cross, N.;
LIVERPOOL—1, Back Leeds Street,
Where is always kept a Stock of Retorts, Fire-Bricks, Terra Cotta Ware, and Drain-Pipes.

EDWARD COCKEY & SONS,
ENGINEERS, IRONFOUNDERS, & CONTRACTORS,
FROME SELWOOD, SOMERSETSHIRE
MANUFACTURERS OF
GASHOLDERS, PURIFIERS, CONDENSERS, SCRUBBERS;
ALSO OF
STEAM-ENGINES, EXHAUSTERS, IMPROVED PUMPS FOR TAR AND LIQUOR,
SLIDE-VALVES,
AND ALL DESCRIPTIONS OF APPARATUS USED IN GAS-WORKS.
PATENTEES AND MANUFACTURERS OF THE
DRY-FACED CENTRE-VALVES,
Which are now so extensively used.

During the last year these Valves have been introduced into some of the large gas-works in London, where they are giving the greatest satisfaction. Favourable reports have been received from the engineers of these and of some of the most important works in the kingdom. The demand for them both for home and foreign works continues unabated.

Every Valve is made with covering bars, to protect ALL the faces. The Patentees found the necessity for this almost immediately after they commenced the manufacture of these Valves, and they have ever since adopted the practice. The large experience they have gained has also enabled them to introduce several minor improvements in the construction of their Valves. It is an advantage peculiar to these Valves that the covers can be easily raised, the faces cleaned and oiled, and kept in perfect condition. If managers of gas-works will periodically attend to this, the Valves will be as good after twenty years use as when first put in.

Messrs. COCKEY AND SONS have been very successful in the erection of many gasholders, some of very large size. They erected, in 1871, at Dublin, for the Alliance Gas Company, one of the largest in the kingdom; telescopic, 182 feet 6 inches diameter. It was referred to by the Chairman of that Company the following year, in his report to the shareholders, as having been in use, and working most effectively, since its erection, and being in the highest degree satisfactory to the Company.

Plans of gas-works are carefully prepared, and every improvement which long practical experience can give is introduced into works entrusted to the care of the Advertisers.

References can be given to the Directors of many Companies who have placed works in their hands, and who will testify to the satisfactory results of so doing.

THE IMPERIAL METER COMPANY, LIMITED,

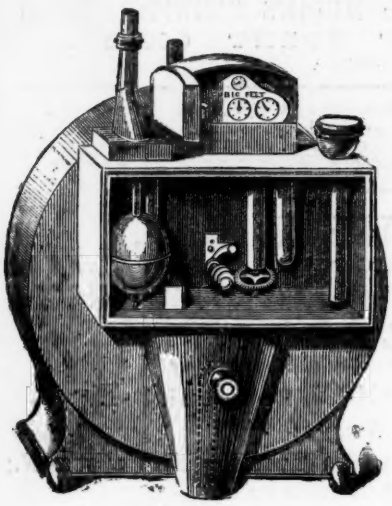
MANUFACTURERS OF

WET AND DRY GAS-METERS,

PRESSURE-GAUGES AND GOVERNORS, AND STREET-LAMP REGULATORS.

FACTORIES:

KING'S ROAD, LONDON, N.W., and GRAY'S INN ROAD, LONDON, W.C.



Front View.

THE

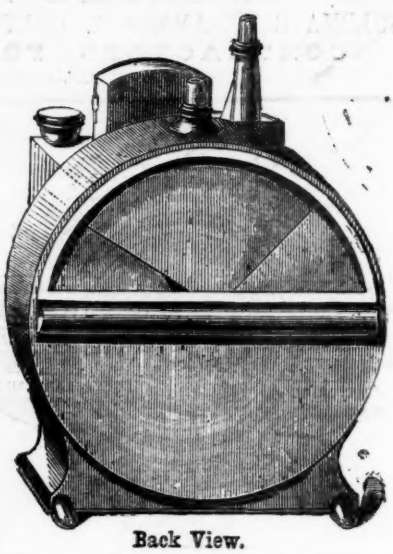
IMPERIAL

COMPENSATING

WET GAS-METER.

DE CASTRO & BURTON'S

PATENT.



Back View.

I. **This Meter is more simple in construction than the common non-compensating Meter.**
II. **An unvarying water-line is maintained.**
III. **No amount or kind of pressure will cause it to "flood."**
IV. **It is practically unaffected by "tilting."**
V. **The friction is less than in any other Meter; and**
VI. **It will last for twelve months without requiring to be refilled.**

THE IMPERIAL METER COMPANY, LIMITED, ALSO MANUFACTURE COMMON NON-COMPENSATING WET GAS-METERS OF ALL SIZES, BOTH IN TIN AND CAST-IRON CASES.

SPECIAL ATTENTION

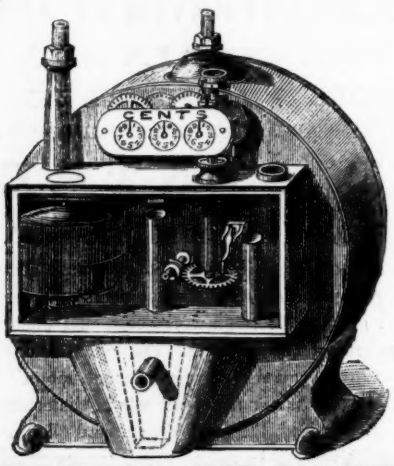
IS PAID TO THE

MANUFACTURE OF

STREET-LAMPS

AND

REGULATORS.



THE IMPERIAL WET GAS-METER.
Non-Compensator.

STATION-METERS

WITH PLANED JOINTS,

AND

GOVERNORS,

MADE TO ORDER

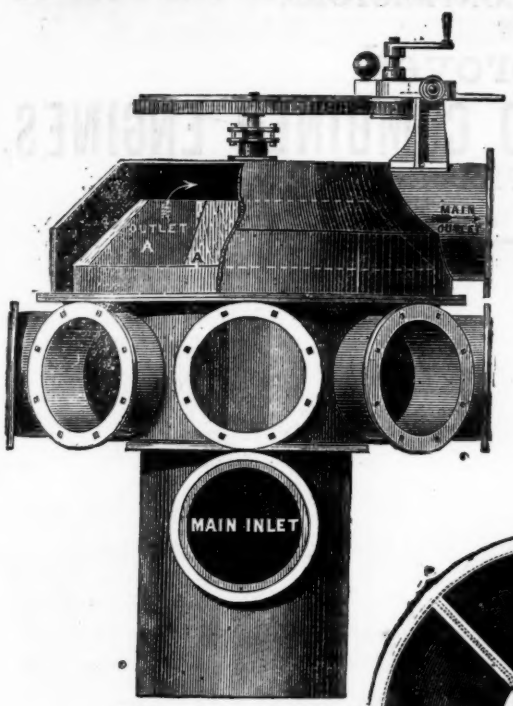
Mr. GEORGE MACKANESS will represent this Company in the Provinces.

OFFICES: 41, FLEET STREET, LONDON, E.C.

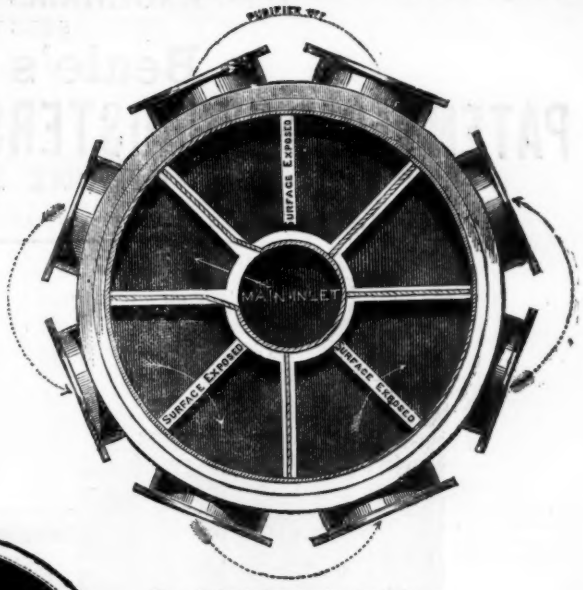
W. MOORE, Secretary

☞ *All Communications to be addressed to the Secretary.*

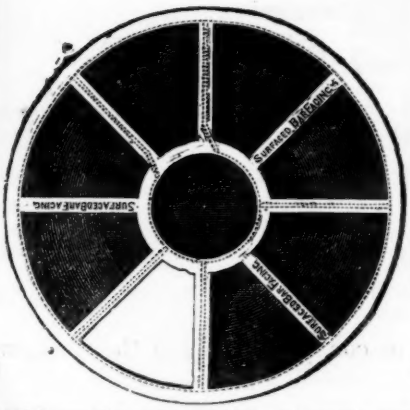
C. & W. WALKERS' PATENT CENTRE-VALVES.



Elevation of the Centre-Valve for four Purifiers. The safety cover is shown broken, to enable the Valve itself, which is inside, to be seen.



Plan of the Body, showing the Valve lying in it, with three of the facings, which were formerly exposed to settlements of dirt, carbon, naphthaline, &c., but which are now always covered by the surfaced bar-facings of the Valve. (See below.)



Plan of the Valve, or upper portion, showing the surfaced bar-facings referred to above.

These PATENT CENTRE-VALVES are the most perfect and certain means for working Purifiers. The Valve itself is protected from all injury inside the safety cover. The working of the Valve is so easy, and so governed by the stop-catch movement, that the Purifiers can be instantaneously changed in the dark as well as in daylight. They are scraped perfectly true, metal to metal, the facings heretofore exposed are always covered, and there is nothing more reliable, certain, and durable in a gas-works. By their use the floor of the Purifying-house is clear and level; the Valve and all connexions being beneath the floor, out of the way of working. A very considerable improvement and saving is effected in the cost of the connecting-pipes.

FOUR-WAY CENTRE-VALVES FORMING INLET, OUTLET, AND BYE-PASS.

MIDLAND IRON-WORKS, DONNINGTON, near NEWPORT, SHROPSHIRE; 8, FINSBURY CIRCUS, LONDON.

WILLEY AND FORD,

GAS ENGINEERS,

WORKS: COMMERCIAL ROAD, EXETER,

INVITE THE ATTENTION OF GAS COMPANIES AND OTHERS FOR THE SUPPLY OF

EVERY DESCRIPTION OF GAS APPARATUS.

ENGINEERING DEPARTMENT.

NEW GAS-WORKS erected complete. Plans and Estimates furnished. MAINS, METERS, SERVICES, LAMPS, &c., adapted for Towns of any size. Gas Companies advised on Improvements, Extensions, and Alterations of Works.

GASHOLDERS AND TANKS.

RETORTS and RETORT-HOUSE FITTINGS, CONDENSERS, SCRUBBERS, ENGINES and EXHAUSTERS, PURIFIERS, STATION-METERS, GOVERNORS, VALVES, &c.

METER DEPARTMENT.

They beg special attention to the excellence and superiority of their WET and DRY METERS, several thousand being now in use by many of the largest Gas Companies in the West of England and South Wales. Warranted to measure correctly, and not to vary. Their acknowledged superiority has brought them into general use more rapidly than any Meters hitherto manufactured. A guarantee of Five years tendered with each Meter.

GAS-FITTING DEPARTMENT.

An extensive variety of Choice Designs in CHANDELIERS, PENDANTS, BRACKETS, STAR and SUN LIGHTS, MEDIÆVAL FITTINGS for CHURCHES, &c.

PATTERN-BOOKS and PRICE LISTS furnished.

☞ PLEASE NOTE THE ADDRESS—

GAS ENGINEERING WORKS, COMMERCIAL ROAD, EXETER.

GEORGE WALLER & CO.,

GAS ENGINEERS AND CONTRACTORS,

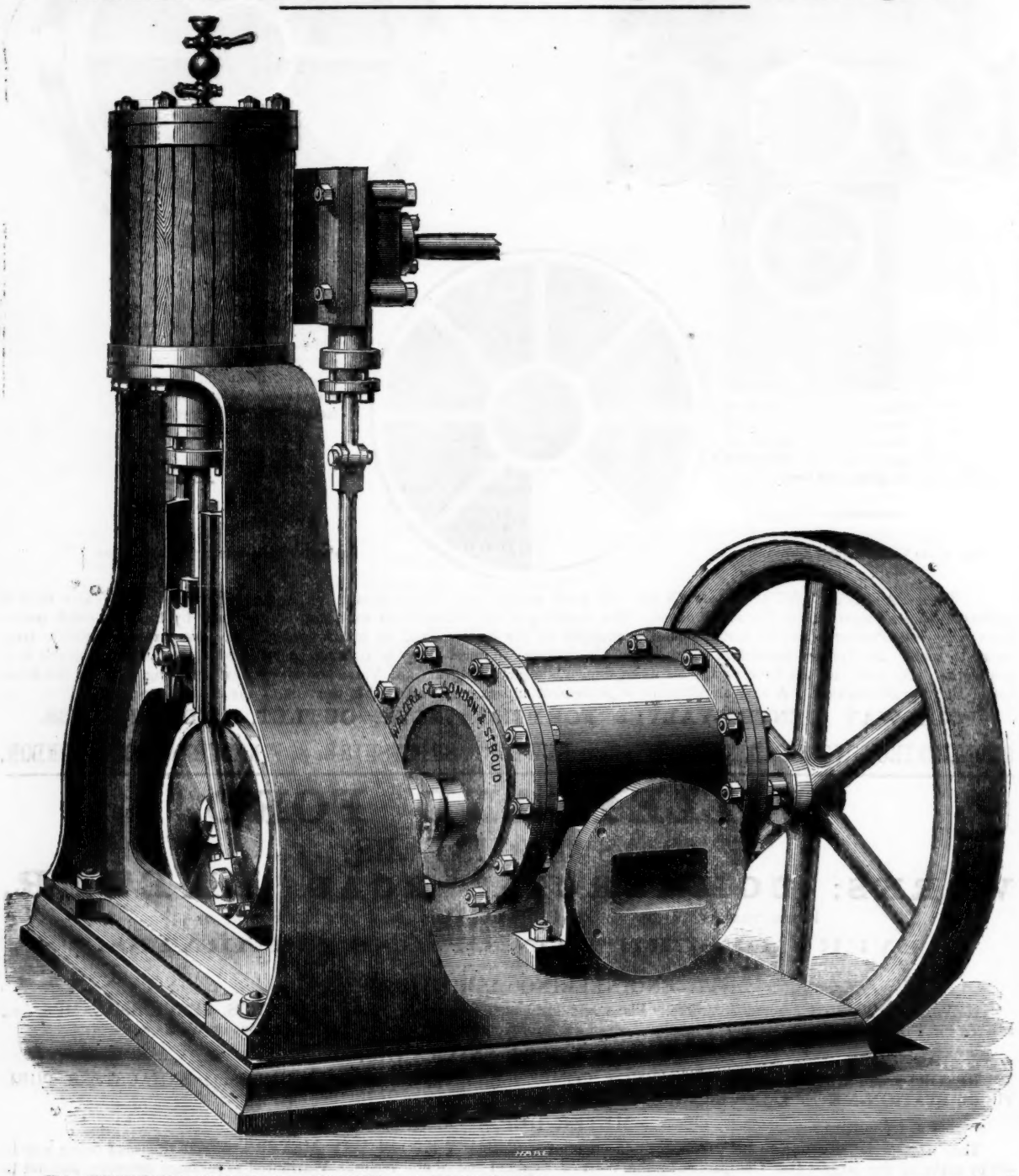
SOLE MAKERS OF

Beale's Improved

PATENT GAS-EXHAUSTERS AND COMBINED ENGINES,

ON ONE BASE PLATE.

NOTE.—The Exhausters are extra large for moderate speed.



This COMBINED VERTICAL ENGINE and EXHAUSTER was specially designed by G. WALLER AND Co. for small works, where space is an object, and is applicable for Exhausters from 1000 to 15,000 per hour. This is the *only* Engine and Exhauster **complete on one Base Plate,** requiring only one foundation.

NOTE.—They are sent away complete, and are easily fixed.

PHŒNIX ENGINEERING WORKS, HOLLAND STREET, SOUTHWARK, S.E.,

AND AT

STROUD, GLOUCESTERSHIRE.

TANGYE BROTHERS AND HOLMAN,

LAURENCE POUNTNEY LANE, LONDON, E.C.,

SOLE MAKERS OF

MORTON'S PATENT SELF-SEALING RETORT-LIDS,

WITH

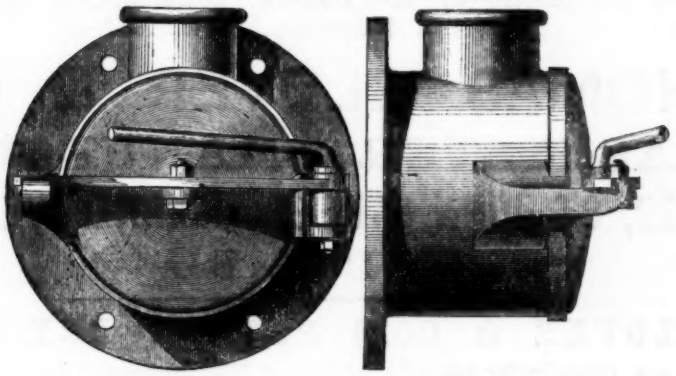
HOLMAN'S PATENT ECCENTRIC FASTENINGS.

OVER 7000 IN USE.

NO LUTING.

LIDS HINGED TO MOUTHPIECES; NO LIFTING ON OR OFF.

NO SCREWS FOR FASTENING.



FRONT VIEW. SIDE VIEW.

SIMPLE.

ECONOMICAL

DURABLE

EFFECTIVE.

NO DUPLICATE LIDS REQUIRED.

These Lids are proved by many eminent Gas Engineers to be the most efficient, saving much time, labour, and expense; are opened and closed as quickly and with as little trouble as an ordinary furnace door, and by their use the Retorts are soundly sealed during the whole period of carbonization.

THESE LIDS ARE ADOPTED BY THE FOLLOWING (AMONG MANY OTHER) GAS COMPANIES:—

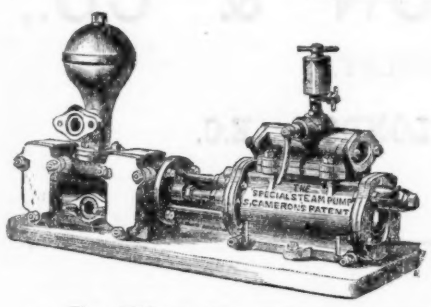
The Gaslight Company, Beckton (where over 2000 are in use).	The Gas-Works, Royal Arsenal, Woolwich.	The Nottingham Gas-Works.
,, Gaslight Company, Bow Common.	,, Alliance and Dublin Gas-Works.	,, Newcastle-on-Tyne Gas-Works.
,, London Gaslight Company.	,, Edinburgh Gas-Works.	,, Carmarthen Gas-Works.
,, Independent Gaslight Company.	,, Manchester Corporation Gas-Works.	,, Merthyr Tydfil Gas-Works.
,, Phœnix Gaslight Company.	,, Salford Corporation Gas-Works.	,, Ystrad Gas-Works.
,, South Metropolitan Gaslight Company.	,, Rochdale Corporation Gas-Works.	,, St. Alban's Gas-Works.
,, West Ham Gas Company.	,, Liverpool United Gas-Works.	,, Over Darwen Gas-Works.
,, Imperial Gaslight Company.	,, Birkenhead Gas-Works.	,, Aylesbury Gas-Works.
	,, Birmingham Gas-Works.	,, Cardiff Gas-Works.

The Morton's Lid is made circular in form, that being the most convenient and suitable shape. It can be used for Retorts of an section, by adapting the Mouthpiece casting from the D, oval, or other shape, at the back, to circular in front.

The following important Testimonial, among others, has been given:—

The Gaslight and Coke Company. Engineer's Office, 6, Westminster Chambers, Nov. 14, 1871.

Dear Sir,—In reply to your inquiry, I have the pleasure of stating that the whole of the Mouthpieces at Beckton have Morton's Lids attached to them, and they have given us every satisfaction. We have 2160 in use.—I remain, yours truly, (Signed) F. J. EVANS.



THE HIGHEST PRIZE AND

ONLY "MEDAL FOR PROGRESS"

For Direct-Acting Steam Pumps for General Purposes,

WAS AWARDED BY

THE INTERNATIONAL JURY AT VIENNA, 1873,

TO

TANGYE BROTHERS AND HOLMAN,

FOR THE

"SPECIAL" STEAM PUMP.

In Use in over Seventy Gas-Works in the United Kingdom,

FOR PUMPING EITHER WATER, AMMONIACAL LIQUOR, OR TAR.

PRICES OF THE LEADING SIZES OF "SPECIAL" STEAM PUMPS ADOPTED IN GAS-WORKS.

Diam. of Steam Cylinder... In.	3	4	4	6	6	8	6	7	7	8	10	8	10	8	12
Diam. of Water Cylinder... ,,	1½	2	3	3	4	4	5	5	6	6	6	7	7	8	8
Length of Stroke ..... ,,	9	9	12	12	12	12	12	12	12	12	12	12	12	18	18
Diam. of Suction & Delivery ,,	1	1¼	2	2	3	3	3½	3½	4	4	4	5	5	6	6
Gallons per Hour, approximate.	680	815	1830	1830	3250	3250	5070	5070	7330	7330	7330	9750	9750	13,000	13,000
PRICE	£16	£20	£25	£30	£40	£50	£46	£50	£52 10s.	£55	£70	£65	£80	£85	£100

HUNT'S PATENT EQUILIBRIUM GAS-GOVERNOR.

TRAVELLERS AND HYDRAULIC LIFTS FOR PURIFIER-LIDS, &c.

CLELAND'S PATENT DIRECT STEAM-JET EXHAUSTERS.

London 1851. New York, 1853. Paris, 1855. London, 1862.

Dublin, 1865.

The SIX MEDALS AWARDED to THOMAS GLOVER for

PATENT DRY GAS-METERS,

The latter being the Highest Medal awarded for Dry Gas-Meters by the Imperial Commissioners for the Universal Exhibition, Paris, 1867.

Paris, 1867.

THOMAS GLOVER & CO.,

DRY GAS-METER MANUFACTURERS,

214 TO 222, ST. JOHN STREET, CLERKENWELL GREEN,

LONDON, E.C.

THOMAS GLOVER & CO.'S PATENT DRY GAS-METERS,

1st, Are a remedy for all the defects of Wet Meters;
2nd, Are suitable for all climates, whether hot or cold;
3rd, Incur no loss of Gas by evaporation;
4th, Cannot become fixed by frost, however severe;
5th, Are the most accurate and unvarying measurers of Gas;
6th, Prevent jumping or unexpected extinction of the Lights;
7th, May be fixed either above or below the level of the Lights;
8th, Cannot be tampered with, without visibly damaging the outer case;
9th, Will last much longer than Wet Meters;
10th, Will not cost more than one-half for repair that Wet or Water Meters do;
Are upheld for five years without charge.

WILLIAM PARKINSON & CO.,

(SUCCESSORS TO SAMUEL CROSLEY,)

COTTAGE LANE, CITY ROAD, LONDON, E.C.

Established 1816.

MANUFACTURERS OF

PATENT WET & DRY METERS,

STATION-METERS AND GOVERNORS,

PRESSURE REGISTERS, GAUGES,

EXPERIMENTAL METERS, PHOTOMETERS, GASHOLDERS, &c., &c.

WATER METERS.

W. P. & Co. beg to state that they are now prepared to supply Station-Meters with planed joints.

CONTENTS.

	Page
Circular to Gas Companies:—	
Retirement of Mr. R. W. Crawford	141
The Air Gas Company	141
Meeting of the Cambridge Gaslight Company	141
Wrexham Corporation—The Cost of Opposing the Gas Company	141
Projected Publication of a Treatise on the Science and Practice of the Manufacture of Coal Gas	141
Report of the West of Scotland Association of Gas Managers	142
Mr. Field's Accounts of the Metropolitan Gas Companies for 1869-70-71	142
Mr. Wyld's Map of the Districts of the Metropolitan Gas Companies	142
Leading Articles:—	
The Accounts of the Metropolitan Water Companies	142
Water and Sanitary Notes	143
Parliamentary Intelligence:—	
Gas and Water Companies Bills, 1874	143
Legal Intelligence:—	
Richmond Petty Sessions—The Thames Conservators *v.* The Richmond Vestry	143
Blackburn Police Court—Committal for Stealing Gas	143
Miscellaneous News:—	
The Composition of the Air of Sewers and Drains. By John Nicholson, F.C.S.	144
Meeting of the Cambridge University and Town Gaslight Company	144
Meeting of the Air Gaslight Company	146
Dublin Corporation Water-Works—Local Government Board Inquiry	148
Accounts of the Metropolitan Water Companies for the Year 1872-3	151
Meeting of the Cambridge Water-Works Company	151
Metropolis Gas Supply	151
The Northern Coal Trade	152
Chemical, Mineral, and Metal Report	152
Partick, Hillhead and Maryhill Gas-Works	153
Register of New Patents:—	
Wright, W.—Manufacture of Gas	152
De Castro, D.—Gas-Meters	152
Ronald and Farmer—Water-Closets	152
Richards, W.—Pipes	153
Applications for Letters Patent	153
Grants of Provisional Protection	153
Notices to Proceed	153
Patents which have passed the Great Seal	153
Patents which have become void	153
Share List of Metropolitan Gas Companies	153
Share List of Provincial Gas Companies	154

NOTICE TO SUBSCRIBERS.

The JOURNAL is published every Tuesday morning.

Single Copy . . . . . 6d., by post 6½d.

SUBSCRIPTIONS.

Yearly . . . . . 21s. in advance.

" . . . . . 25s. on credit.

Half-Yearly . . . . . 10s. 6d. in advance.

" . . . . . 12s. 6d. on credit.

All communications for the Editor, remittances for subscriptions, and orders for advertisements should be addressed to the publisher, William B. King, 11, Bolt Court, Fleet Street, London, E.C.

THE JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

TUESDAY, FEBRUARY 3, 1874.

Circular to Gas Companies.

WE may be permitted here to express our regret at the retirement from political life of Mr. R. W. Crawford, late member for the City of London. By this retirement, unhappily caused by failing health, gas companies lose the support of the most influential friend they had in the late Parliament. Mr. Crawford was essentially the representative of the commercial classes, and as such was always prominent in defence of commercial interests. His firm opposition contributed more than that of any other member to those modifications of the Municipal Corporations (Borough Funds) Bill, which, while still leaving it an obnoxious measure, yet protect gas companies from wanton and uncontrolled attacks on the part of corporate bodies. Either of the two commercial candidates who seek to replace him may be as active as he in defence of the rights of commercial enterprise, but gas companies will always owe a debt of gratitude to Mr. R. W. Crawford.

At a special meeting of the Air Gas Company a committee o seven shareholders were appointed, to ascertain the real position of the company, with power to call to their aid experts, in the shape of engineers, chemists, and accountants, in order to decide whether or not the inventions, for which the company paid £100,000, can ever be worked at a profit. We are bound to say that the resolution is a sensible one, though to our minds unnecessary, and if the committee will only consult competent advisers, the public may get some useful information as to the value of this and all similar schemes. The conclusion that will be arrived at we do not think doubtful, but it seems that the committee will have a difficulty in deciding what is the invention they have bought and paid for. The thing is never alike at two places. One apparatus is tried at the Crystal Palace, another at Richmond, a third at Fulham. The company publish a pamphlet describing their machines, and in a month or so it is all changed, and another pamphlet is published. All this is characteristic of ignorance. Here is another example of the deluded public being befooled into giving an extravagant price for "a crude idea." If the idea had been good for anything, the price would still have been extravagant; but any intelligent man who read the patents must have known that they were worthless. As regards the experiments at the Crystal Palace, we expressed at the time a strong opinion as to what happened there; and now we are not astonished to hear the managing director of the Air Gas Company say that he declined all responsibility in the construction of the works at the Palace. The proposal subsequently made to the Crystal Palace Company must have been intended to provoke a refusal, for it was clearly one that could not be accepted. The patentee will, of course, be contented if the shareholders will continue to furnish him with the means of making experiments; but if they are wise they will decline to throw good money after bad, and before making another investment, seek for a better guarantee of stability.

At the half-yearly meeting of the Cambridge University and Town Gaslight Company, held last Thursday, we find the Rev. Dr. Phelps still "pegging away" at the Gas and Water Works Facilities Act, 1873. The process is known to be effective; and we hope the combined efforts of all interested in gas undertakings will lead to the enactment of a very different measure when next the Legislature takes the case of gas companies in hand. The learned doctor once more contrasts, in his own forcible manner, the simple justice Parliament has shown to the large metropolitan companies, and the gross injustice inflicted on country undertakings by the Act we have named. The Cambridge Company have declined to avail themselves of the provisions of that "unjust and humiliating Act," and have decided to wait for better times in the hope of making up the losses they have sustained. Dr. Phelps is more hopeful than we are. The price of coal is certainly giving way, and new collieries are being opened in considerable numbers; but the permanent advance in the price of coal will, in our opinion, be such as to render necessary a general revision of the maximum prices fixed before 1872, and it is to the consideration of a simple and just measure for effecting this that gas companies should devote themselves. The Gas and Water Companies Association ought to be active in the promotion of such a measure, and in calling the attention of our new representatives to the commercial importance of the matter.

If country gas companies have to complain of the injustice of the Legislature, provincial corporations are no less entitled to make complaint. We, last week, adverted to a question which has arisen as to whether or not the Corporation of London and the Metropolitan Board of Works should pay the expenses they incurred in opposing the Chartered Company last year. We said that we never had any doubt that those authorities ought, under the circumstances, to pay their own costs, and we did not think it necessary to mention that the commissioners had decided that the company should pay. Their decision will be found on page 466 of our last volume. Well, to our minds, with all deference to the commissioners, that decision is bad, and it is properly appealed against. It would be infamous to allow the rich and powerful bodies to indulge in litigation at the expense of gas companies. Let us see how it fares with a small country Corporation. The Wrexham Gas Company lately made an application to the Board of Trade under the Gas and Water Works Facilities Act, 1873, and the Corporation were so ill-advised as to oppose. A local inquiry was held, and the Corporation indulged in the luxury of an eminent barrister and an eminent engineer from London, and in the end they ran up a little bill of £450. This the Corporation have to pay—there is no dispute about it in their case—and it is really a serious matter. A bill for £450 means a 4½d. rate in Wrexham, and the ratepayers will certainly be mulcted to that extent in the course of the next quarter. It is worth mentioning as showing the necessity for keeping some restraint on Town Councils that, in an insignificant place like Wrexham, where the expenditure of every £100 means an additional 1d. on the rates, they have since 1870 spent £1100 in opposing the gas company, which has obliged the company to spend £2100 in self-defence. The latter sum is, of course, paid by gas consumers only; the former is levied on consumers and non-consumers alike. But to return to our starting-point. Is it possible that the Legislature can have intended that the Wrexham Corporation should pay costs, and the metropolitan authorities fix them on the gas companies? No; according to all analogy, common sense, and common law, the Corporation of London and the Metropolitan Board of Works should pay their own costs, and we confidently rely on a decision to that effect.

It has occurred to us that the weekly publication of the JOURNAL OF GAS LIGHTING affords the opportunity of giving to our periodical a greater and more permanent interest to a large class of our readers. For many years past the fortnightly publication has been mainly devoted to what we might call the politics of gas companies. Reports of parliamentary committees, legal proceedings, and of half-yearly meetings, have hitherto occupied the bulk of our space—not, indeed, to the entire exclusion of

scientific and practical information, but necessarily, seeing the demands made on our columns, to a limitation of the room which could be devoted to information of great and growing importance. We are conscious that past efforts have given to our JOURNAL an acknowledged place in periodical literature, and we have reason to believe that it supplies a sensible want. But our enlarged space now offers the means of extending the usefulness of the JOURNAL. Foremost among our ideas is the intention to devote a larger space to scientific information on matters connected with gas and water supply and sanitary matters. But our attention has often been called to the want of "A Treatise on the "Science and Practice of the Manufacture and Distribution of "Coal Gas," which should include all the acknowledged improvements in the art up to the present time. It is the publication of such a work that we propose shortly to commence in these pages. We do not intend here to enter upon any criticisms of the several works on the subject now before our readers. The last edition of Mr. Clegg's treatise, and the more practical work of the late Mr. S. Hughes, have their merits. But since the publication of these works, enormous progress has been made; and a generation of gas managers have grown up who have no other source of information but the above-named works to refer to. We may, therefore, take it, and in fact we are assured that the want of a work of the nature we design is at the present time strongly felt, and we believe that the publication will be fully appreciated by our readers. It is not our intention to produce a bulky or voluminous book. We believe that all sound scientific and practical information on our speciality may be compressed into a comparatively small space. In order, however, to enable our readers to arrive at a clear understanding of much that will be written, plans, drawings, and illustrations will often be necessary, and to the perfection of these we shall give especial attention; they will, in fact, constitute an important feature. The work will be composed on a somewhat novel plan. We propose to commence with a short sketch of the history of gas lighting, then to give a full account of the geology, lithology, and chemistry of our raw material, coal, and afterwards to follow the gas step by step from the retort to the burner, showing what is done and what is required at every stage of the manufacture and distribution of coal gas. After this will naturally follow a brief account of the manufacture of gas from materials other than coal, and some description of the inventions designed to supersede coal gas by the carburization of atmospheric air, and the gases produced by the decomposition of water. Finally, some space will be devoted to an account of the utilization of residuals. In this way we intend to lay before our readers a full and complete account of the science and art of the occupation with which they are concerned, brought, as we have said, down to most recent times. We are already assured that the undertaking will prove acceptable to our subscribers, but we still invite suggestions from our readers, to which attentive consideration will be given, and due weight attached.

The West of Scotland Association of Gas Managers have issued a second edition of their report for 1873. In this we have some particulars the first edition did not contain. We have now, we believe, a complete list of Scottish undertakings, with the names of the managers, the population of the district supplied by each undertaking, the annual manufacture of gas at most, the amount of leakage at many, with the average illuminating power of the gas supplied, the price to ordinary consumers and to public lamps, and meter-rents when charged. The compilation is very instructive. We find the quality of gas in Scotland ranging from 11 to 34 candles, and the price from 5s. to 15s. per 1000 feet. The per centage of unaccounted-for gas varies from 6¼ to 25 per cent. The compilation of this report reflects the greatest credit on the association.

We may mention here that Mr. Field, the eminent accountant of the Imperial Company, has just issued an analysis of the accounts of the metropolitan gas companies for the years 1869, 1870, and 1871. These analyses are a valuable addition to that of the accounts for 1872, as we are now enabled to trace the effects of the rise in the price of coal and labour on the companies.

Here, too, we may notice the re-issue, by Mr. Wyld, of his map of the districts of the metropolitan gas companies. It is an excellent map of London, extending from Beckton to the extreme limits of the late Western Company's district, and exhibits very accurately the limits of every company. Of course, all the districts united with the Chartered Company's are now represented by one shade of colour.

We understand that Mr. G. W. Stevenson is only engaged for the Imperial Company in the forthcoming revision, and not, as we stated in our last, for both that company and the Chartered.

We are happy to say that the appeal we have made for further information as to the condition of gas industry at the present time, has been heartily responded to, and to-day we are able to give an extensive list of prices and quality of gas, and also of the rises of price which took place in the course of last year. We may say at once that we heartily thank our correspondents for the information they have afforded us, which we believe will prove of great interest to all our readers. The returns have continued to reach us up to the very moment of going to press, and we must consequently reserve the general conclusions that are to be drawn from them until next week.

THE ACCOUNTS OF THE METROPOLITAN WATER COMPANIES.

WE publish on another page an analysis of the return of the accounts of the metropolitan water companies for 1872, made in accordance with the provisions of the Metropolis Water Act, 1871. Our readers will see that in some respects the accounts are more complete for the past year than the previous. We have now in all of them the items of expense for maintenance of reservoirs and distribution works distinct, and some other items quite separate. We are thus in a better position to judge of the comparative economy of the working of the different companies. There is really nothing to be said on these points. Any one who knows the circumstances of the several companies will easily account for the difference in working expenses. Hypercritical vestrymen may be struck with what appear to be extravagant charges on the part of the West Middlesex Company, in whose case both expenses and rents appear to be in excess of those of other companies, but no doubt an explanation will be readily forthcoming.

The total expenditure on capital account of the whole of the metropolitan companies now amounts to £10,402,751. This is equivalent to something over £92,000 per million gallons of daily supply, and shows that the London companies have been economically worked, considering the circumstances under which they have grown up. The capital account of the Liverpool Corporation is considerably larger in comparison; and in Glasgow and Manchester, where the circumstances have been exceptionally favourable, the gross cost per million gallons has only been one-third less than in London.

Turning to the Thames, in connexion with which we have recently made some remarks, we find that the five companies who take their supply from that source have, during the past year, furnished to their consumers a daily average of 56,738,629 gallons. Assuming the gaugings of Mr. Bateman in 1865 to be correct, as they no doubt are, the gross daily quantity of water passing above Hampton does not exceed 300,000,000 gallons. We thus find the companies taking over one-sixth of the water from the river. The growing importance of this matter will be seen when we compare the quantities taken by the five companies in 1862 and in 1872:—

	1862. Gallons daily.		1872. Gallons daily.
Chelsea	6,811,000	..	8,651,592
Grand Junction	8,455,179	..	11,150,873
Lambeth	6,962,700	..	10,990,902
Southwark and Vauxhall	11,244,177	..	16,510,386
West Middlesex	6,924,744	..	9,435,876
Total	40,397,800	..	56,739,629
			40,397,800
Increased take in 10 years			16,341,829

The average daily supply per head of population is still something over 30 gallons. Of this one-half, at least, is wasted, and it is thus seen that under efficient regulations London could be adequately supplied with water, and 25 millions of gallons be saved to the river. What a wise economy, carried as far as it possibly may be under present circumstances, can do is shown in the case of the New River Company, who now supply only about one million more gallons per day than they did in 1862, and positively less than was supplied in 1858. Similarly in the case of the East London Company, in whose district probably more houses have been built during the past 10 years than in any other district, the daily consumption of water has only increased by about 3 millions of gallons since 1862.

The water-rents of the metropolitan companies, it will be seen, now exceed £1,000,000 a year—an income sufficient to excite the cupidity of the Corporation of the future, if the probability were seen of making a profit by taking them over. The cost of the purchase, however, would render that impossible without a considerable addition to our water-rates, which most people believe to be high enough already.

It will not fail to be noticed that all the companies are continually adding to their expenditure on capital account. This expenditure is necessitated by the increasing demands made on the companies; but if the regulations already made were carried into effect, and a constant service introduced, there would, as we have shown, be an immediate saving of one-half of the present consumption, and, as a consequence, no further extensions would be required, and the capital accounts of the companies would be practically closed for many years to come.

If no other argument for the speedy enforcement of the regulations made and sanctioned prevailed, this might, in the interests of both ratepayers and companies.

WATER AND SANITARY NOTES.

HANLEY, no doubt, is an example of a town in which the water-fittings require the closest attention. It is built on a series of hills, and is supplied by gravitation, nominally on the constant service system. The water company send into the town daily 20½ gallons of water per head of population; but, of course, there are numerous complaints of a deficient supply, and the reason is not far to seek. The water, no doubt, dribbles away in the lower parts of the town, and the higher levels get but a small quantity. It is evidently a case for the strict enforcement of efficient regulations as to internal fittings. The Town Council of Hanley, however, can only find fault with the water company, and express their disbelief in the supply of 20½ gallons per head, threatening, of course, to take the supply into their own hands. If the council will only give the company what assistance lies in their power to check the waste of water, they will do more good than can be effected by grumbling. We have not the Hanley Water Act before us to see what powers the company have for the prevention of waste; but if those they possess are not sufficient, the company should lose no time in applying for another Act, or an order under the Gas and Water Works Facilities Act, which would confer all that is necessary.

The Town Commissioners of Cambridge have successfully vindicated themselves from the charge of producing typhoid fever in Caius College and elsewhere. The drainage of the college does not appear to be perfect, but that is the fault of the college authorities, and not of the commissioners. At Barnwell it seems that no sewer was opened, and the allegation that the outbreak of typhoid was consequent on such opening of course falls to the ground. It would be well if the sensational writers who travel about the country for the medical journals, and who have lately been busy in the eastern counties, were more careful about their facts. It is not unlikely, we understand, that a case, showing how reports are got up for the medical papers, will come before a law court in the shape of an action for libel. It is curious to notice how the contradictory opinions as to the efficient cause of typhoid are made use of, just as one or the other serves a purpose. On the one hand it is asserted that the poison of typhoid can only act when introduced into the digestive canal. As there is no suspicion of the contamination of Cambridge water, it was necessary to fall back on the theory that the poison is volatile and exists in sewer gas. If medical men would only settle which is the true theory, what a boon would be conferred.

Before going farther, we may just mention a notable discovery made by a medical officer of health in the East of London. It is that the conversion of the contents of dust-bins into bricks may be productive of disease, inasmuch as the bricks may carry contagion, and, further, that the use of old building materials in new houses is calculated to perpetuate fever. We do not know whether this gentleman's object is to bring contempt on all that pretends to be sanitary science, or whether he is interested in clay brickfields.

The Richmond Vestry have been let off with the small fine of £1 per day instead of £50, with the caution that a larger penalty will be inflicted next time they are summoned, if something be not done at once. The proceedings did not disclose whether or not the object of the Thames Conservators is to compel the vestry to divert the sewage altogether from the river, or whether they would be content with such purification as may be deemed sufficient before the sewage enters the stream. The works necessary to completely divert the sewage from the river would take a very long time in construction, but adequate purifying works might be erected in a few months. No valid reason for the entire exclusion of the sewage can be alleged, but, on the contrary, much might be said in favour of its admission. A very considerable quantity of water, probably 300,000 gallons a day, which now belongs to the river would be shut out, and it may be remembered that the neighbourhood of the mouths of sewers is the favourite feeding-ground of such fish as Thames anglers delight to catch.

Ipswich, like a good many other places, is in difficulties about sewage. A committee of the Town Council have reported in favour of a scheme for draining the town into the river, but they were met by a resolution, which was carried, in favour of a fuller consideration of the means of removing excreta, house refuse, &c., in a condition better adapted than sewage for agricultural use. In the course of the debate, the question of the ventilation of sewers cropped up, on which subject we may refer to a discussion that took place recently at a meeting of the Association of Municipal and Sanitary Engineers and Surveyors at Liverpool. There the almost unanimously expressed opinion was in favour of openings in the streets. It stands to reason that the more vents are given to the sewers, the less chance there is of sewer gases penetrating into houses, and the greater probability there is of the oxidation of such vapours or gases as may be noxious. It will be seen by a very able paper we publish to-day on the composition of the air of sewers and drains, that the author, Mr. Nicholson, entertains precisely the same views. Make, he says, every possible communication between the sewers and the open air, and guard as carefully every connexion with the insides of houses. Mr. Nicholson's analyses show the improvements made in sewer air by the introduction of numerous open ventilators.

While on sanitary matters, we may mention the "Local Government Directory, Almanac, and Guide" for the year 1874, published by Knight and Co., an exceedingly useful compilation, giving the names of every Poor Law and Local Board official in the country. The book is essential to every one concerned in the administration of the poor and sanitary laws.

Parliamentary Intelligence.

GAS AND WATER COMPANIES BILLS, 1874.

The examiners of private bills, of which notices have been given for the session 1874, sat on Monday, the 26th ult., when the Skipton Local Board Bill passed the standing orders. On Tuesday, the 27th, they declared the Standing Orders complied with in the cases of the Truro Water and Belfast Corporation Gas Bills. On Wednesday, the 28th, the Tunbridge Wells Gas and Wakefield Water Bills passed the Standing Orders stage. The standing Orders were not complied with in the Lofthouse and Liverton Gas and Shipley Local Board of Health cases.

Legal Intelligence.

RICHMOND PETTY SESSIONS.—TUESDAY, JAN. 27.

(*Before Mr.* PENRYN *and a Bench of Magistrates.*)

THE THAMES CONSERVATORS *v.* THE RICHMOND VESTRY.

THE RICHMOND DRAINAGE.

This was an adjourned summons against the Richmond Select Vestry, for neglecting to divert the flow of sewage from the Thames by the 21st of October, 1870.

Mr. MEADOWS WHITE appeared for the Thames Conservators; the Hon. A. THESIGER, Q.C., represented the Richmond Select Vestry.

The cross-examination of Mr. *Senior* having been finished,

Mr. THESIGER addressed the bench for the defence. He contended that the vestry had no control over the sewers till 1872, and that even if they had so great were the difficulties of the case they could not have done more than they had.

The BENCH convicted the defendants in a penalty of £150, being at the rate of £1 a day during which the nuisance had continued. The CHAIRMAN remarked that the vestry had had very great difficulties to deal with, but had not used due diligence between the years 1871 and 1873.

Mr. THESIGER intimated that in all probability the vestry would appeal against the decision.

BLACKBURN POLICE COURT.—MONDAY, JAN. 26.

COMMITTAL FOR STEALING GAS.

William Harrison, *Henry Hayhurst*, and *Robert Blacoe*, alias *Robert Blacoe Ellis*, were brought up on remand, charged with the illicit distillation of spirits, at Nos. 2 and 4, Emily Street; also with stealing 57,000 feet of gas, the property of the Blackburn Gaslight Company.

Mr. HOLLAND appeared for the two first prisoners.

The prisoners Harrison and Hayhurst, who had been discovered by the detective officers in charge of the still, were brought up first and summarily convicted for the first offence. Harrison was then fined £30, or three months, and Hayhurst £60, or six months. In reference to the second charge, the following evidence was given:—

Detective officer *Livesey* said: On the 17th of January I went, in company with other officers, to the house in question. I went to the back. I found No. 4 back door was locked. I saw Hayhurst look out; he then shut the door and bolted it. I then went through the window, when I found the prisoners in custody of Superintendent Eastwood and other officers. The gas-burner produced was under a still for the purpose of heating it.

Superintendent *Eastwood* said: On the day in question I went with Livesey to No. 3. The door was locked and the blind was down. No. 4 was also locked. The key was inside. While standing at the door I heard footsteps come from the back, the door was then unlocked, and I found Hayhurst and Harrison preparing to come out. I stopped them and took them into custody.

Detective officer *Holden* said: The gas apparatus has 53 burners attached to it. There were two gas service-pipes connected with the gas apparatus. I afterwards arrested Ellis in Preston. I charged him with stealing the gas, in presence of the other prisoners. They said nothing in reply to the charge. Hayhurst afterwards said that the gas-pipes had been attached before he and Harrison went to the premises.

Michael Jackson said: I am a gas-fitter in the employ of the Blackburn Gaslight Company. On the day in question I went to No. 4, Emily Street, at about two o'clock. I went with the officers, after the prisoners had been apprehended. I then saw the gas apparatus produced; it was attached by pipes to the company's service-pipes. The service-pipes were in both houses; a pipe was brought through the partition wall. I saw a small piece of pipe protruding through the outer wall of No. 2 house; that was the place where the company's pipe would have protruded if it had not been connected. I should have been deceived by the appearance of the pipe if I had not known the circumstances of its connexion. There was nothing to prevent the full flow of gas from both service-pipes. The consumption of gas would be very great when the apparatus was burning. There was no meter in either house.

Cross-examined: The pipe projected from No. 2. The gas was connected with the company's mains in the first instance from No. 2. The service-pipe was joined in both houses; there were two connexions. The service-pipe would have deceived me.

The prisoner *Ellis* said the apparatus burned twenty times more air than gas.

John Duckworth said: I am meter inspector for the Blackburn Gaslight Company. On the 28th of May last year, I took the state of the meter at the house No. 2, but I did not see the gas cut off.

Francis Gill said: I am in the employ of the Blackburn Gaslight Company as a labourer. I cut off the meter at No. 2, Emily Street, on the 17th of June, 1873. On the 20th of November I did the same at No. 4. I took both meters away on the 20th of November. I saw Ellis; he opened the door when I removed the meter; he was then living there. He said he was not going to have gas any longer.

Cross-examined by *Ellis:* I do not recollect you coming to ask me to remove the meter.

Mr. *Orlando Brothers* examined, said: I am manager for the Blackburn Gaslight Company. I have not examined the houses, but I have received a report about them. I have examined the gas apparatus produced.

Michael Jackson re-examined, said the service-pipe was a half-inch one.

Mr. *Brothers* re-examined, said the consumption of gas would be 100 feet per hour with the apparatus produced. The total value of the gas consumed would be £12 19s. That is a very low estimate. The consumption of the gas in Nos. 2 and 4 would considerably reduce the supply of gas in the adjoining houses, in consequence of the service-pipe not being large, and it is doubtful if the neighbouring house got proper light at all.

The prisoner *Ellis* asked the witness if the apparatus did not burn 20 times as much air as gas.

Witness: It would be perfectly impossible.

Jane Marsh examined: I am the wife of Joseph Marsh, weaver, and live at 3, Emily Street. I remember Ellis taking the house No. 2, about three months ago. I had some conversation with him. He said he was a coal agent, and wanted the shop for an office. In a few weeks afterwards he went to No. 4 and resided. I did not know the other two prisoners. During the last six weeks my gas has been different to what it was previously. It was lower. It varied, and was lower some days than others. My gas has improved since the prisoners have been apprehended.

Ellis asked this witness if the mills had not affected the light, and caused a decrease of gas while they were drawing upon it.

Witness said the mills had some influence on the gas, and that the supply was better after they had concluded work.

William Ford said: I am a tin-plate worker, residing at Preston. I know the two prisoners, Hayhurst and Ellis. I have known Hayhurst two years. About Dec. 12 Hayhurst came to my shop. He ordered a boiler to be made. He also brought with him a condenser to be altered. In a few days after that the prisoner Ellis came to my shop. He asked how I was going on with the boiler. He pressed me to push on with it. In three days after he came for the boiler. He had a cart with him. He took the lot with him. At Christmas Hayhurst came and fetched a burner he had ordered. He also took away the lead piping produced. I have seen a condenser at the Excise Office, which I made for Hayhurst.

The prisoners Harrison and Hayhurst, on the advice of their solicitor, pleaded "Not guilty."

Ellis said: I plead guilty to connecting the pipes for the gas, and that neither Harrison nor Hayhurst had anything to do with it at the time. I gave Hayhurst orders to obtain the gas apparatus produced, in Preston. There has not been much gas burnt. There has only been about 25 gallons of whisky made, which only took 12 hours in making. Harrison and Hayhurst were my servants, and I agreed to give them 30s. a week each.

The BENCH formally committed the prisoners to the sessions.

The prisoner Ellis has been carrying on the trade of a whisky distiller for 40 years, and in April, 1856, was convicted at Liverpool of stealing 7000 feet of gas, and was sent to prison for a month. He had on a second occasion been convicted of stealing gas at Liverpool.

Miscellaneous News.

THE COMPOSITION OF THE AIR OF SEWERS AND DRAINS.

By JOHN NICHOLSON, F.C.S.

[A Paper read at the British Pharmaceutical Conference.]

It is only during the last few years that attention has been drawn to the agency of sewer gases in the production and transmission of typhoid fever and other epidemic diseases; consequently, the nature of these gases and the composition of the air in the interior of the sewers have not often been subjected to any scientific examination.

Now that the subject has been brought more prominently before the public, these examinations will doubtless become more numerous; as from the variable nature of the compounds, it will be only by tabulating and comparing a great number of analyses that any useful information can be obtained.

I offer this first experience of mine as an item of evidence on a subject that I consider of great importance, which will repay a more thorough investigation than it has yet received.

In 1871, Sunderland, in common with many other towns, suffered from a visitation of small-pox, the severity of which was partly attributed to a want of ventilation in the sewers. In the same year, borrowing powers were applied for to extend the sewerage to the new parts of the town; in consequence of which application an official from the Local Government Board was sent down to make the necessary investigations.

This gentleman attached considerable importance to the aforesaid absence of ventilation, and made it an imperative condition that this state of things should be remedied, recommending several plans that were considered successful in other towns, but leaving it to the corporation to adopt what they thought best.

The ideas and method on which the Sunderland sewers had been constructed were directly opposite in principle to those now insisted on. According to the highest sanitary authorities of 20 years ago, the sewerage system was perfect, every joint perfectly cemented, every outlet securely trapped, and every precaution taken, at a great expense, to keep the enemy underground; and all done by the express order of the then Local Government Board.

The Health Committee, in whose province this matter fell, before making such a complete reversal of all their arrangements, wished to ascertain the actual state of the air in the interior of the sewers, and employed me for that purpose. I made the examination at the end of September, 1871, obtaining the air by fixing a bell-mouthed pipe, of about ten inches diameter, into the wall of one of the main sewers at its upper end; from this I carried up a small pipe into a temporary house erected near the spot, and drew the air out with an aspirator, taking care to have every joint air tight, and to draw out a few thousand cubic inches every time, before commencing.

This sewer drains a considerable section of the town, and was selected for examination because it was considered more thoroughly trapped than any of the others, and has its outlet in the river, under water at all times except the low water of spring tides.

The average composition of the air in this sewer I found to be:—

Nitrogen.	Oxygen.	Carbonic Acid.	Sulphuretted Hydrogen.	Ammonia.
81·1	18·4	0·5	Traces.	Traces.

Specific gravity 1001·5; greatest amount of pressure with advancing tide, one-fifth of an inch on a fine water-gauge representing $\frac{13}{100}$ of an ounce to the square inch of surface. When these results were obtained, there were still wanting the means of comparison with other towns. The only information I could meet with on the subject consisted of two analyses kindly furnished me by Dr. Letheby, one made by himself in the London sewers, in 1858, and the other in the same year at Paris by M. Gaultier de Claubry. On comparing these, which I have arranged in a tabular form, I found that we were not in so good a condition as London in 1858, but very much better than Paris.

The amount of sulphuretted hydrogen and carbonic acid was much less than I expected to find, and I was rather surprised at the specific gravity being so low; all the writers that I have seen on the subject of sewer gas mention it as being a dense, heavy compound, that will almost fall through the air unaltered; but I have not before seen an actual estimation of its gravity.

With regard to the efficient ventilation of the sewers, I drew the following conclusions:—

1. That we must not place too much reliance on the schemes proposed and plans adopted in other large towns, as we have absolutely no data at all as to the state of the sewer gases there, while we know there are many essential differences in the manufactures carried on, the position of the town, and the disposal of the sewage, all of which tend to prevent comparison between any two towns.

2. As we know that the gas will pass through the water-traps into the houses in a greater or less degree, our obvious principle of ventilation may be stated concisely. Make every possible communication between the sewers and the open air, and guard just as carefully every connexion with the insides of houses. By numerous openings, the little pressure there is will be removed, so that a less quantity will pass through the traps, while that will have been so diluted by the diffusion of air through the sewers as in a great measure to have lost its noxious effects.

3. There is not sufficient pressure in the sewers to force the gas to any great height in narrow tubes, so that the nearer the openings are to the ground, the more readily will diffusion be carried on, and the more numerous the openings are, the more will the gas be diluted both inside the sewers and when it issues out into the air.

The ventilation was carried out for the whole length of the sewer I had examined, by perforating the iron cover of each man-hole with circular openings, while each flushing-pipe and lamp-hole on the smaller branches was covered with a grating instead of a solid piece of iron.

There was thus an opening obtained to the outer air at an average of every one hundred yards of the sewer and all its branches.

After this had been completed, and in operation for some months, I made a further examination of the air at the same place in February, 1873, under as nearly as possible the same conditions of weather, when I found a change in the proportions of all the constituents; it now contained:—

Nitrogen.	Oxygen.	Carbonic Acid.	Sulphuretted Hydrogen.	Ammonia.
80·35	19·37	0·23	None.	0·05

Specific gravity, 998·75.

The proportion of oxygen was nearly 1 per cent. higher, representing an improvement of 37 per cent. on the analyses of 1871.

The carbonic acid was ·27 per cent. lower, showing an improvement of 54 per cent., and I was not able to obtain the slightest indication of the presence of sulphuretted hydrogen.

The greatest difference I found was an increase in the quantity of free ammonia, which could now be estimated easily, and the specific gravity was considerably lower, owing, no doubt, to this larger proportion of ammonia and the reduction in the amount of carbonic acid.

From these data I arrived at the conclusion that a large body of air enters the sewer at the ventilators, and becoming mixed with the gas that is formed there, dilutes it and renders it more rapidly diffusible at every opening.

	Nitrogen.	Oxygen.	Carbonic Acid.	Sulphuretted Hydrogen.	Ammonia.
Atmospheric air	78·96	21·00	0·04	None	Traces
Sunderland, 1871	81·1	18·4	0·5	Traces	Traces
Sunderland, 1873	80·35	19·37	0·23	None	0·05
London, 1858	79·96	19·51	—	Traces	—
Paris, 1858	78 86	17·93	2·29	0·92	—

CAMBRIDGE UNIVERSITY AND TOWN GASLIGHT COMPANY.

The Half-Yearly Meeting of the Shareholders was held on Thursday, Jan. 29—the Rev. Dr. PHELPS, Master of Sidney Sussex College, presiding.

The following report and statements of account were presented and taken as read:—

The directors herewith submit to the shareholders a statement of accounts for the half year ending Christmas, 1873, which accounts have been duly audited.

The profit and loss account appears to show a balance of £928 7s. 1d. on the side of profit. It must be observed that only a small portion of the half year's rates has yet been paid, pending the result of an appeal which the company is prosecuting before the Assessment Committee for the purpose of obtaining a reduction of the amount at which it is assessed. Also it must be observed that in accordance with a suggestion made by a shareholder at the last ordinary half-yearly meeting, the payment of the annuity to the late manager has been suspended, pending the decision of the shareholders at the half-yearly meeting on the 29th inst.

It will be remembered that in their last report the directors expressed great anxiety for the result of the next half year's working. They anticipated, in fact, that there would be loss instead of profit, and circumstances at that time fully justified those gloomy anticipations. Fortunately, and contrary to expectation, the price of coal began to fall before it became necessary to increase the stock of coals, and the directors are abstaining from ordering more at a time than is sufficient to keep up the supply of gas, thus taking full advantage of the falling price, which, although still very high, exhibits, it may be hoped, a permanent reduction from that of last July. There has been, at the same time, a continued and steady demand for residual products at increased prices. These facts have enabled the directors to present a balance-sheet, which, though far indeed from satisfactory, is nevertheless better than they expected.

Under these circumstances the directors feel justified in recommending a dividend for the half year after the rate of £5 per cent. per annum on the consolidated stock, and on the amount paid up on the new shares, payable on the 2nd proximo, free of income-tax.

The directors regret to state that Mr. John Hall, one of the auditors, has expressed a wish to retire from the office. It will therefore be the duty of the shareholders, at the meeting on the 29th inst., to elect his successor.

To the Directors of the Cambridge University and Town Gaslight Company.

Cambridge University and Town Gaslight Company's Office, Sidney Street, Cambridge, Jan. 14, 1874.

Gentlemen,—I have to report that during the past half year, gas has been laid on for 34 additional consumers, and that the number of public lamps remains the same.

The repairs adverted to in my previous report have been completed, and a proper supply of gas has been afforded without difficulty.

In the illuminating power and pressure of the gas, the company have fully complied with the obligations imposed by the Legislature.

I am, gentlemen, your obedient servant, WM. WOOD, Manager.

BALANCE-SHEET FOR HALF YEAR ENDING CHRISTMAS, 1873.

Dr.				*Capital Account.*				*Cr.*		
Consolidated stock			£37,440	0	0	Expenditure on capital account		£56,589	4	1
New shares—first call of £2 per share on 1872 shares			3,744	0	0					
Ditto—second call on ditto			3,744	0	0					
Ditto—third call of £1 per sh.			1,872	0	0					
Loan:										
The executors of the late H.R. Evans, Esq., on mortgage			5,000	0	0					
Messrs. Foster's temporary advance			4,300	0	0					
Balance			489	4	1					
			£56,589	4	1			£56,589	4	1
Profit and Loss.										
Coal carbonized			£7,482	4	3	Sale of gas and meter rents (less bad debts and allowances, £31 15s.)		£8,803	7	8
Supervision and labour			967	3	5	Fittings — profit (less bad debts, discounts, & allowances, £8 10s. 6d.)		291	19	4
Trade accounts			1,114	7	8	Residual products:				
Distribution:						Sale of coke (less bad debts, discounts, and allowances, £23 11s. 4d.)		2,860	16	8
Wages			463	16	1	Sale of tar		170	8	1
Trade Accounts			565	15	1	Ditto sulphate of ammonia		374	2	0
Miscellaneous:						Rents		11	13	3
Directors allowance			150	0	0	Sundries		31	10	0
Salaries			302	10	0					
Collectors commission			69	13	11					
Auditors			10	10	0					
Annuities			20	5	0					
Stationery and printing			39	4	4					
Rent			40	0	0					
*Rates and taxes			158	2	8					
Interest			231	17	6					
Balance (half year's profit)			928	7	1					
			£12,543	17	0			£12,543	17	0
General Balances.										
Revenue account			£928	7	1	Amount owing for gas		£6,797	10	0
Manager's ditto			300	0	0	Ditto coke		1,166	13	9
Banker's ditto			2,406	4	2	Ditto fittings		1,314	12	10
Floating assets, Midsumer, '73	£8,189	19	6			Ditto tar		106	18	6
Balnce. of revenue account, Midsummer, '73	959	19	0			Ditto sulphate of ammonia		161	14	5
	£9,149	18	6			Stock in hand:				
Less dividend, declared July 14, 1873	935	19	10			Coals		186	12	0
			8,213	18	8	Coke		404	10	0
Unpaid dividend			32	13	0	Fittings		294	3	8
						Tar		105	10	0
						Meters		853	13	8
						Capital account		489	4	1
			£11,881	2	11			£11,881	2	11

The CHAIRMAN, in moving the adoption of the report, said: Gentlemen, I feel I should be unworthy of the position of chairman of this company if I allowed an opportunity of this kind to pass without a few words, however brief and unequal to the occasion, on the subject of our common interests and prospects. At our last half-yearly meeting I addressed you under an overwhelming conviction that gas enterprise was meeting with treatment of very great injustice at the hands of the Legislature. I am not prepared to withdraw one word of the complaint to which I then gave utterance. I revert to it now in order to urge upon all gas proprietors that they must be on the alert, and ready on all occasions, and in every possible way, to assert their rights and refute the false arguments and views by which their property is being assailed and menaced. I recollect that when the bill for confiscating half the property of gas shares throughout the country was before Parliament, I called to it the attention of an eminent member of the House of Commons, and I was much struck with his remarks. He said the case of the gas companies was undoubtedly a strong one, but that the subject was not in his line. He felt that its arguments were not within his grasp, and that he could not do justice to them. It should be entrusted, he said, on the part of the gas companies, to some member who has made the subject his special study, and represents in some sort the gas interest. It would be altogether vain, he added, and useless for him to attempt to take any prominent part in the debate on such a bill. This was to me a rather sad suggestion of the helplessness of any particular interest marked out for hostile attack by skilful parliamentary tacticians, and my prognostic therefrom was soon to be verified. The bill was brought in when most of the members, weary with the session, were retreating from their labours, and those only remained who were separately interested in the particular measures still left for discussion. Moreover, few members could be expected, without some special awakening, to look at a gas question otherwise than from the ratepayers point of view. And to the ratepayer, as such, gas companies are fair prey. They are looked upon as enemies, as insatiable and oppressive extortioners, whose demands it is virtuous and patriotic to resist. The public are represented in popular journals as their victims. The said journals take, of course, the popular side, and keep up the unjust agitation in favour of their tens of thousands of customers. How is the comparatively feeble voice of a gas company to make itself heard against the infinite multiplicity of these powerful and irresistible organs, which, if they do not play the part of the unscrupulous advocate, are certainly chargeable with admitting to their columns the grossest misrepresentations of the elements of the whole question. The London companies are again making application, in accordance with the terms of their special Acts of Parliament, to raise the price of gas. Not necessarily to raise the price higher than it has just been, but simply to raise it, or continue it, above the statutory limit, according to the result of the judicial investigation to which they appeal. The vestries, however, are up in arms, and, blind to everything but their pockets, are determined to resist this reasonable and lawful proceeding. Fortunately for the London companies, the machinery of their Acts for obtaining a fair adjustment of the price of gas to the actual circumstances of the manufacture does not require them to submit to the humiliating and confiscatory conditions of the Act to which I have been alluding. The adjustment of price in their case, is to be made with the express recognition that 10 per cent. per annum is a fair and reasonable rate of profit; and the decision of the referees will be an unjust and illegal decision if it be not based on the principle of rendering that rate of profit attainable, with prudent management, under the inevitable conditions of the manufacture, whatever those conditions may be. And here, gentlemen—from this point—comes into view a most unjust and disgraceful legislative anomaly. While this rate of profit, in the case of the London companies, is not only acknowledged to be fair and reasonable, but is virtually secured to them by statutory enactments, the fairness and reasonableness of that rate of profit in the case of all other gas companies under special Acts of Parliament, are virtually repudiated. For if these companies, under the very same circumstances, apply for powers to raise the price of gas so as to enable them to make their customary and statutory rate of profit, they are met by a new statutory condition limiting the allowable rate of profit to 5 per cent. I confess I can hardly conceive anything more unfair than this. Justice in all cases demands that there shall at any rate be one and the same law for the rich and the poor—for the strong and the weak. There is surely something rotten in a legislative system which admits of such glaring inconsistencies as these. No man is expected to be on his guard against traps laid to deceive him by the Legislature. Yet it is hardly an exaggeration to say that such a trap has been laid for the shareholders in provincial gas companies. Capital was undoubtedly attracted to those undertakings by the formal recognition in a public general Act of Parliament that gas companies would be allowed to realize any amount of profit not exceeding 10 per cent. Upon this assurance the necessary capital was advanced and irretrievably committed. And thereupon followed, as a natural financial consequence, the establishments in the money market of a stock paying 5 per cent. to investors and subject to almost no fluctuation, which may be called the gas share stock. This stock came to be regarded by the public, from their faith in the law, as a perfectly safe investment. But, lo and behold! at the fag end of the last session of Parliament, when it was scarcely possible to make a House, a bill is brought in, ostensibly for the relief of gas companies embarrassed by the unprecedented and unforeseen rise in the price of the main element of their manufacture. This bill, adopted by a Cabinet minister and carried, expressly repudiates the very condition on which alone the financial character of the said statutably created stock depended. Now when it is considered that the whole question, involving such momentous consequences to the investing public, had been settled by years of discussion and negotiation between the companies and parliamentary committees—both sides availing themselves of the aid of experts of all kinds, acute lawyers and able financiers, learned chemists and skilful engineers—it was surely not unreasonable to expect that that settlement, as far as regarded the fundamental principles of the question, was to be permanent. Nobody professes to have been able to foresee that the price of coal was liable to be doubled. If that liability had been foreseen, is it likely the companies, in a negotiation, whose object on their part was the security of a reasonable rate of profit would have admitted such limits to the price of gas as they have admitted? The supposition is simply preposterous. As I have said, and feel that I cannot too persistently reiterate, it was absolutely on the faith of justice in the Legislature that the necessary capital for these indispensable undertakings was irretrievably laid out, and the gas share stock admitted to a place on the list of the most accredited investments. The money has been absorbed, the advantages have been enjoyed, but the main condition on which the money and the benefits were obtained has been repudiated. That is the simple, undeniable truth. We all know that endless traps are laid for the unwary and the grasping by unscrupulous private speculators, as witnessed by the impudent prospectuses which almost daily fill our waste paper baskets. And the gullibility of a large portion of the public may be measured by the enormous wealth amassed by those who are known to have been most successfully engaged in floating gigantic schemes of ruin. Indeed, I may remark, in passing, that wealth so vast appears to have been accumulated in some of these cases, that, after its too clever possessors have exhausted all ordinary means of enjoyment as represented by private luxury and display, they have actually—I suppose in the quest of some entirely new excitement—been known to aspire to a reputation for sumptuous beneficence, by lavish expenditure on some great and conspicuous object of public utility and adornment. There must, therefore, be a great many who fall into these purely financial traps, but most of us flatter ourselves that we are proof even against the generous promises of unlimited dividends. We hear also of high bids for money from insolvent states, which have bidden adieu to self-respect. But we are rash enough to bless our stars that our own great country is not yet in that hopelessly demoralized category, whatever may be the condition towards which it is progressively advancing, or hopelessly drifting. We have hitherto believed that anything approaching to the nature of a national guarantee, with us, might be completely relied on. Are we henceforth to be forced to admit that so flattering a belief is mere delusion, and that projects recommended to our acceptance by such virtual guarantees are, after all, hardly more safe than those of the prospectuses to which I have been alluding? Is Parliament become the arena of sordid stratagems whose success is due to tacticians who are not ashamed of a surreptitious triumph? Let us hope that the new Parliament will redress the great injustice which has been inflicted on one of the most useful and indispensable industries of the age; that it will pass a new general Act fully recognizing the right to remuneration, the concession of which procured for every town in the country the best and most economical light that has ever yet been discovered. Whether we are to see this measure of justice effected or not, and whatever may be the future of gas interests, for the present, as far as we are concerned, the Gas and Water-Works Facilities Act of 1873 is a nullity. It offers us no relief whatever; for our actual circumstances, bad as they are, do not so bring us within the limits of its insulting pity as that we should have to sue for powers to raise our price of gas in order that we may be graciously permitted to make a profit of 5 per cent. on our capital, implying barely 2½ per cent. on the capital invested by most of our shareholders. And, for my part, if even I saw no chance of a dividend so high as 5 per cent., I would never counsel an application to the Board of Trade, under the provisions of that unjust and humiliating Act. But our dividends will, I trust, fall no more so low as that of the last half year. The price of coal is giving way, and while the means of supply are being rapidly increased by the opening of a large number of new collieries ready to compete with the old ones, the demand for coal for the iron-works is but too likely to diminish; and so we may reasonably conclude there will be a still further fall in the price. Of course with the fall in coal there must also be a fall in coke, for which a little while ago we were getting an unprecedented figure. It has, however, already been lowered, in accordance with the fall in coal, and affords a most valuable and comparatively cheap fuel to the poor, and indeed to all who are wise enough to use it. Meanwhile, we abide by our Act of 1867 and the general Acts therewith incorporated. It may be that, at no distant date, we shall be able, under the powers of those Acts, to recoup our present losses. We must patiently insist upon the complete recognition of our rights, and continue to exercise those which are left to us. We are conscious that we are doing our duty to the public. We do not flinch from our contracts. We are fulfilling our part, and, as far as we are able, we will exact the advantages to which we have a righteous claim. It may not perhaps be generally known to the inhabitants of Cambridge, but I think it right that they should know that, while at Peterborough and Yarmouth the price of gas is 5s. per 1000 feet; at Wisbech, 5s. 10d.; at Bedford, 5s. 6d.; and at Ely, 6s., this company is supplying the private consumers of Cambridge at 4s., and the public lamps at about 3s. per 1000 feet. If, therefore, this company should see its way to a lawful mode of compensation for the losses it is now incurring, the public will, I feel sure, admit and recognize the company's right to avail themselves of it. Before I sit down, gentlemen, I must do myself the pleasure of mentioning a circumstance which thoroughly accords with my whole knowledge of the character of our eminent engineer, my friend Mr. Hawksley (for I venture to hope he will allow me the pride and pleasure of so calling him), the president of the Institution of Civil Engineers of England—a circumstance which, I have no doubt, he would think of not sufficient importance to be made prominent on this occasion, but I should thiuk it a dereliction of duty to omit. It is this, that although he is at all times ready with his invaluable advice and guidance, he has begged to decline receiving his customary professional stipend for the two last half years, in consideration of the necessarily defective profits of the business. I beg leave to propose the adoption of the directors report.

Mr. GOROBED seconded the adoption of the directors report, and agreed with the chairman in so far that the shareholders of gas companies had been unfairly treated. If they referred to bygones, he could not help thinking that the company voluntarily put themselves under the limit of 4s. as the price of gas by their last Act, and he was astonished at the time that there

* The amount of the rates for the past half year has not yet been paid, pending an appeal which the company is prosecuting before the Assessment Committee.

were not more of his opinion when he raised his voice against their putting themselves under that limit. As to the future, he was afraid they would get but little relief from Parliament, and he therefore trusted there would be extra economy and extra facilities in the manufacture of gas so as to reduce their expenditure. He saw that the South Metropolitan Gas Company, though charging only 2s. 10d. per 1000 feet for their gas, were yet able to declare a dividend of 10 per cent.; and he hoped the executive of the Cambridge Company would look into the particulars of that company with a view to imitation.

Mr. S. PEED agreed with Mr. Gotobed that it would have been well, if it had been possible, to have had a sliding scale as to the price of their gas, but it was the opposition which they met with in their application to Parliament which caused the limit now in force. The company could not have done other than they did in reference to that application, because they required capital, and this they could not raise unless they went to Parliament. But it was their opponents who reduced their maximum rate to 4s. per 1000. As to the South Metropolitan Company, he had no doubt the directors would give attention to that and any suggestion made by shareholders.

The CHAIRMAN observed that the South Metropolitan Company was absolutely exceptional, and there must be some transaction giving them special advantages which required explanation. No other gas company in the kingdom could do anything of the kind. In Cambridge they were as careful as could be; and he was sure that in their case, as in that of many other companies he knew of, such a state of things as that of the South Metropolitan Company would be absolutely impossible.

The motion was then put and agreed to.

On the motion of the CHAIRMAN, seconded by Mr. PEED, a dividend of 5 per cent., in accordance with the recommendation of the directors, was agreed to.

A long discussion then ensued as to the annuity of £100 paid to Mr. Gifford, the late manager. A motion was made by the MAYOR that, in consideration of the circumstances of the company, the annuity be discontinued. This was met by an amendment to continue the annuity, but to reduce the amount one-half, and in the end the amendment was carried by a considerable majority.

After the election of an auditor, the proceedings closed with a vote of thanks to the chairman.

AIR GASLIGHT COMPANY, LIMITED.

Pursuant to the directions of his honour the Vice-Chancellor Hall, given on the hearing of two petitions for winding up the above company (one presented by a great majority of the directors, shareholders, and the other by two independent shareholders), an Extraordinary General Meeting of the shareholders was held at the London Tavern, Bishopsgate Street, London, on Wednesday, the 28th ult., to ascertain whether the shareholders wished the business of the company to go on, or the company be wound up in any and what manner. Sir J. MURRAY, Bart., the chairman of the company, presided. There was a large attendance, and much excitement prevailed during the proceedings.

Annexed to the notice convening the meeting was the balance-sheet showing the position of the company's affairs on Dec. 31 last, with profit and loss account to the same date, as follows:—

Dr.	*Profit and Loss Account, from Oct., 1872, to Dec. 31, 1873.*			*Cr.*		
Losses on the following accounts:—				Profit on sale of apparatus and royalties	324	6 0
Darenth Vale	£28	3	0	Transfer and other fees	37	7 0
Crystal Palace	1,947	5	11	Interest on deposit at bankers	26	3 2
Tiverton	159	1	0	Balance being net loss*	9,224	14 7
Richmond	162	14	5			
Holborn works	695	13	1			
Do. gasogen consumed	105	3	6			
Dublin	10	4	6			
Office expenses—books, stationery, and petty cash	510	6	2			
Office furniture account for depreciation	31	13	9			
Office rent	243	15	0			
Salaries	2,365	6	0			
Directors fees	1,095	18	7			
Do. suspense account	740	12	6			
Travelling expenses	24	15	2			
Bank charges	13	8	4			
General expenses	285	17	5			
Law costs	955	0	10			
Interest and discount on calls	237	11	7			
	£9,612	10	9		£9,612	10 9

Dr.	*Balance-Sheet, Dec. 31, 1873.*			*Cr.*		
Capital, £200,000, in 40,000 shares of £5 each, of which there has been subscribed 12,645, on which £4 has been called	£50,580	0	0	Preliminary expenses	£3,835	14 10
Less calls unpaid, viz.—				Less deposit of 10s. per share on 400 shares, forfeited and cancelled, written off this account	200	0 0
On allotment of 10s. per share, £113 10 0					£3,635	14 10
1st call of £1 do. 356 0 0				Patents account for purchase of English and cost of obtaining foreign patents	101,069	3 6
2nd call of £1 do. 560 0 0				Machine, plant, utensils, &c., at High Holborn, estimated at	250	0 0
3rd call of £1 do. 5,137 0 0				Furniture at 46, Finsbury Circus £321 13 9		
Total due on calls	6,176	10	0	Less depreciation written off	31 13 9	
	44,403	10	0		290	0 0
13,932 shares, on which £5 has been paid	69,960	0	0	Debtors for apparatus, &c., supplied	495	15 9
Total 26,637 shares subscribed on which there has been paid	114,363	10	0	Cash at bankers	705	12 0
Creditors, sundry	187	12	10	Petty cash in hand	2	14 2
Do., salaries	381	19	6	Suspense account for disputed claims	564	18 0
Disputed claims	564	18	0	Profit and loss account for net loss	9,224	14 7
Suspense account for directors fees from June, 1873	740	12	6			
	£116,238	12	10		£116,238	12 10

The CHAIRMAN said the notice read by the secretary sufficiently explained the reason for the present meeting. It appeared that among the shareholders, and to a certain extent among the directors, there was a difference of opinion. In the first place a petition had been presented by the directors to wind up the company. A petition had also been presented by Messrs. Puckle and Wilkinson, two shareholders, backed up by some of their friends, for a similar purpose. On the other hand there was a strong opinion in the minds of some of the shareholders that the company should not be wound up. When such a difference of opinion did exist in respect to a matter of so much importance—and it certainly was a matter of importance as it affected their pockets—it was desirable that they should meet together and endeavour to arrive at some kind of general understanding. It would be recollected that when the company was started there were reports obtained from scientific men for the guidance of the directors and shareholders. One of those reports was by Major-General Scott; another by Mr. Pierce, one of the late referees of the Board of Trade; and a third by Mr. Child, an analytical chemist of London. There were 12,645 shares issued at the time and subscribed for by the public. Of that number the directors and their friends, being thoroughly convinced of the value of the undertaking, subscribed for 5000, representing the sum of £25,000. It could not be supposed for a moment that he and his coadjutors on the board would have themselves taken, and recommended their friends to take, so large a stake in the concern, if they had not had the greatest confidence in it. Probably before anything further was said, the meeting would like to hear from Captain Lord, the managing director, a statement in reference to the present state of the affairs of the company.

Captain LORD proceeded to read the affidavit of Mr. C. W. Harrison, the "registered patentee of the air gas invention," filed in opposition to the directors petition to wind up the company, answering each allegation as he proceeded. In the 9th allegation Mr. Harrison said that after the company was formed he and his son, at their own expense, in order to prove that the air gas was a complete success, continued the tenancy of their premises, 1, High Holborn, where they erected apparatus sufficient to supply 100 gaslights; and, to show the working to the public, they erected apparatus showing the manufacture both on a small and on a large scale, and in connexion therewith showed the burning of ordinary coal gas in order that the public might see the contrast in the light. His (Captain Lord's) answer to that was that Mr. Harrison declined to give up the premises in Holborn unless he was paid for them, and he was paid for the same up to March, 1873. He then entered into a manufacturing contract with the company, only stipulating that his foreman should be retained by the company at 50s. a week in order to show the process. The directors thought it a fair thing to do, and therefore agreed to it; but when Mr. Harrison said he kept up the premises he was wrong. They were kept up at the expense of the company, and the expense altogether amounted to about £600. Mr. Harrison, in the 10th paragraph, said that several machines for supplying the gas were made by them, and agents were appointed to represent them and the company in different parts of the country. No doubt he did, but he constantly varied the machines, and that was one great cause of the difficulty the company had in carrying on the concern. On the 15th of April last, under the special directions of Mr. Harrison, the company published a pamphlet describing the machine then manufactured, and giving the prices; but this pamphlet was entirely negatived, a few months afterwards, by another pamphlet which Harrison brought out on his own account without the sanction of the company. In his affidavit he went on to say that several of the agents wrote to say that they had received good accounts of the machines and of their complete success. In some places, however, where the liquid used was of an inferior quality, the gas was, as a matter of course, not so good. In some instances, no doubt, the machines had answered, but the uncertainty of obtaining the precise kind of material mentioned in the patent was a great difficulty in the way of the introduction of the invention. Mr. Harrison said that, apart from the testimony of the agents, he and his son had supplied machines to various persons, and had received letters expressing approval of them. All he (Captain Lord) could say in reply was that from the 20th of August last, which was the day on which Mr. Harrison took the manufacturing licence from the company, up to the end of the year, he had only reported to the company the manufacture of nine machines, which yielded a royalty of £39 9s. 4d., and the company did not get satisfactory reports as to the working of these machines. The affidavit then referred to the experiments at the Crystal Palace, a portion of which, no doubt, was very nicely lighted up, but no result was attained from that experiment. Mr. Harrison said that he (Captain Lord) presided at a dinner given on the occasion, expressed his entire satisfaction at the manner in which the air gas had been shown and the brilliancy of the light, and notes were also read of the consumption, showing a great difference in favour of the air gas as compared with ordinary coal gas. The only note read at that dinner had no reference to the consumption at all; it was simply a certificate from the meter man connected with the Palace, that no coal gas of any description had passed through the air gas mains. And he would add that, with regard to any part he took in the construction of the works there, he declined all responsibility, and he specially wrote Mr. Harrison to that effect. Next, the affidavit said that after this successful exhibition Mr. Harrison wrote to the manager of the Crystal Palace offering to supply the whole Palace at 25 per cent. less than they were then paying. He did so, certainly, but the Crystal Palace Company did not accept the offer. In the first place, according to the proposition made by Mr. Harrison, it would have required an enormous outlay for plant and a total alteration of the whole lighting arrangements. He required that the Palace should be lighted entirely with standards, and the company declined on this ground, and also because they were not entirely satisfied as to what the actual cost of the material consumed would be. The affidavit then went on to speak of Richmond, where permission was obtained to light up a portion of the town, and some of the directors went down and expressed satisfaction at the result. Several trials were made there; some succeeded and some failed. The result of the whole was that there was nothing to enable the directors of the Richmond Company to arrive at a conclusion whether they could use the process or not, and it ended in this way, that as they could no longer provide the Air Gas Company the exclusive use of a gasholder, they gave them notice to withdraw. It must be understood that there was a totally different system carried out at Richmond to that which was employed at the Crystal Palace. Mr. Harrison went on to say that the company afterwards took some premises at Fulham, and erected apparatus to show that much cheaper gas oil might be employed, from which gas might be obtained far superior to ordinary coal gas, at considerably less cost, and that they came to the conclusion that from one ton of gas oil, costing 30s. the ton, there might, with the proper diluents, be made 67,100 cubic feet of 15-candle gas, and that the cost would be about 10d. per gallon. This was a new process, somewhat different from that which originally was intended to be employed at Richmond. It was the subject of quite a new patent, dated the 30th of October last. Sundry trials did take place, and at one of them there certainly was a production of something like 70,000 cubic feet of gas, but the question of cost was not gone into, and as far as respected the statement that it would only cost 10d. per gallon, he (Captain Lord) could not agree in its correctness. In the 18th allegation of the affidavit, Mr. Harrison said that if the directors of the company had used sufficient energy in the concern, they might have made it very profitable. This was a statement which the directors disputed. Then Mr. Harrison denied the truth of the statement in the petition that the process did not produce the result expected, and averred that the experiments quite reached their expectations. He also denied that the undertaking had proved unremunerative and disappointing, in consequence of the expense in procuring the material for making the gas. He alleged that they could obtain gas oils at about 10d. per gallon, and if the company had taken the proper steps to distil such crude oils as were obtained here, it could have been obtained at less, thus bringing the cost of the gas down to 2s. 6d. per 1000 feet. On all these points he differed from Mr. Harrison, and so far as the question of the distillation of crude petroleum was concerned, he believed it could only have been done at a large outlay. Mr. Harrison complained that the directors did not sufficiently advertise the company, whereas they sent out 8000 pamphlets, and advertised in all the daily papers. He then complained that the directors had not been sufficiently energetic in the management, but had expended the money of the company in furnishing expensive suites of offices, and keeping up an unnecessary staff of clerks. The answer to that was that the directors had done everything in their power to push the company, and the balance-sheet showed the various works they had undertaken; and as to office expenses, they had been materially reduced. The affidavit stated that the com-

* This loss is exclusive of a per centage of the preliminary expenses, which, under ordinary circumstances, would be debited to profit and loss account.

pany might have obtained an advantageous contract from Ireland. It was true the directors had been in treaty with an Irish company, and the matter was now only suspended until Messrs. Harrison and Son could produce something that would satisfy them. Mr. Harrison said the company possessed several valuable foreign patents, to which he (Captain Lord) replied that all attempts to sell foreign patents had failed for the same reason as suspended the Irish contract. Mr. Harrison stated that he had made an offer to take and work the Indian patents himself, but that offer was accompanied by conditions that could not be accepted, and though Mr. Harrison had been invited to attend the meetings of the directors thereon, he had never attended. The affidavit next stated that within the last week Mr. Harrison had had an interview with the engineer of one of the principal gas companies on the subject of applying the patent process to their works, which negotiation was still pending." All that could be said about this was that the directors knew nothing about it. He complained that he had never seen any accounts, but the books were always open to him, and he said that up to the time of the petition being presented, he was constantly meeting the managing director, who never informed him in any way that the company anticipated taking steps to wind up; but, on the contrary, expressed himself desirous of continuing in his office. This was totally wrong, as Mr. Harrison was frequently informed by the board, the secretary, and himself that unless he could show some great success the company must be wound up. He stated that it was not until the 7th of January, when the advertisement of the petition appeared in the papers, that his attention was first called to it, when he immediately wrote to the managing director, expressing his astonishment, and stating that he should oppose it. Then he stated his opinion that the company would have been successful with proper and energetic management—that it was now in a better position than ever to test its capabilities, and might be worked to greater advantage. This, of course, was a mere matter of opinion on which he and the directors differed. He then went on to state that he had called a meeting of the shareholders; that he believed it would be ruinous to wind up the company, and that upon an estimate which he had made he found that the amount of business done and in hand would pay a dividend of 3 per cent. per annum on the paid-up capital, exclusive of the expenses of the directors, and that from the daily increasing demand for apparatus, the profits of the company in the course of another year, if properly managed, would allow of a dividend of between 5 and 10 per cent. This was certainly a most extraordinary statement to make in the face of the balance-sheet. He (Captain Lord) had made some copious notes of the proceedings of the company since the 14th of June last, which he was desirous to read to the shareholders. At the last meeting a good deal of dissatisfaction was expressed, which would probably have led to the winding up of the company at that time if it had not been that Mr. Harrison made certain statements—amongst others a statement of the magnificent success he intended to achieve at Richmond. He also gratified the shareholders by the exhibition of a lamp.

Mr. PANNELL said he understood that those statements were not made by Mr. Harrison only, but were endorsed by the board.

Captain LORD said the board unquestionably believed what Mr. Harrison said at the time. It would be remembered that at the meeting this time last year Mr. Harrison spoke about a most perfect lamp which was ready for use, but which he was advised not to exhibit just then, as the patent was not quite secure. This lamp, when it came to be tried, did not answer, and ultimately broke down entirely. But at the last meeting of the shareholders Mr. Harrison exhibited another lamp, which he said he had purchased from Mr. Kidd at a cost of £1000, and which he made a present of to the company. The directors were of opinion, and it was endorsed by the shareholders, that the trials at Richmond should be carried out, but there was a feeling expressed also that the directors should associate themselves with a committee of the shareholders for consultation. The next day a letter was written to Mr. Dolman by him (Captain Lord) saying that the directors were willing to have such a committee appointed; but he and several other shareholders who were spoken to on the subject believed it would be better in the first place to see the result of the Richmond experiment. The lamp which Mr. Harrison exhibited was apparently a very beautiful one, and the directors believed that he had paid £1000 for it, and that the arrangements were all complete. However, a few days afterwards they were surprised to learn from Mr. Kidd that the £1000 had not been paid, and that Mr. Harrison declined to pay it. A good deal of correspondence ensued, and Mr. Kidd attended at the board meeting. It resulted in Mr. Harrison stating that Kidd's patent was no patent at all, and that any one could use it. The negotiations, therefore, fell to the ground; Kidd moved away from Harrison's premises, and the latter made some lamps on Kidd's pattern, which he sent to the board. They did not, however, answer, and the whole affair dropped to the ground. With reference to the Richmond experiments, he (Captain Lord) did not know how it could be said that the directors endorsed what was done, as a success, at the last meeting, inasmuch as the trials had not then been made. What was intended by those trials was to strengthen the weak coal gas of the gas company, and there were many partial lightings up; but in the meantime Mr. Harrison changed his system from that which was originally intended, and this necessitated a great number of alterations of plant and waste of time, till at length the Richmond Company requiring their gasholder, gave notice to the Air Gas Company to withdraw. (Great impatience was here manifested by the shareholders at the length of Captain Lord's observations, and he therefore abruptly closed his remarks by advising the formation of a committee to investigate the affairs of the company, and satisfy themselves whether the directors were right in their conclusion that it was impossible to carry on the business with a prospect of success.)

After a variety of questions had been put by shareholders in different parts of the room, and replied to by the secretary and solicitor,

Mr. DOLMAN made a speech of some length, in which he urged the meeting to remember that the only issue to be decided that day was whether the circumstances of the company were such that the directors were justified in presenting a petition to wind up the concern. He thought a great deal of misunderstanding and much heart-burning would have been saved if before taking that step the directors had called the shareholders together, told them the plain unvarnished truth, and asked what course they would recommend. If a committee were now appointed they would look thoroughly into the company's affairs, and make a report on some future occasion, as to whether there was any property or not in the patent which the company had bought, and whether it was possibly to carry on the concern with the hope of a profit.

The CHAIRMAN said he concurred in every word spoken by Mr. Dolman. It might well be supposed that the directors were in very great difficulty to know what to do, having heard so much discontent expressed by the shareholders, and having heard the intention avowed in several quarters to present a petition to wind up. As chairman of the company, he was bound to take his share of responsibility for the course the directors adopted, but he ought also to say that at the time the petition was presented he was absent in Scotland, and the decision of the board in the matter was much against his own wishes. He thought it was wrong not to have called the shareholders together in the first place. He hoped the suggestion made by Mr. Dolman would be carried out, and that a thorough investigation would be made, for he was sure it would prove that the directors had done their duty to the utmost in relation to the company.

Mr. WHIFFEN thought the Vice-Chancellor should be asked to adjourn the further hearing of the petition until all the facts (respecting which at present there was a conflict between the directors and Mr. Harrison), were ascertained. If the company were wound up the whole of the property of the shareholders would be gone, whereas it might prove upon investigation that it was possible to carry on the concern at a small profit by cutting down the expenses.

Mr. HARRISON (the patentee) said, thanks to the Vice-Chancellor, the shareholders had been convened that day to meet the directors without the company being wound up. There was no reason why it should be wound up, and the directors took a most extraordinary step in petitioning the court with that object before consulting the shareholders, especially as the ordinary half-yearly meeting was just at hand. There was plenty of merit in the patent to make the company a success. But how could it succeed when only about £6000 was laid out upon it, though in other things the directors had expended £6000. There had been a very wrong application of the money. He was now selling the machines, and had a whole handful of letters testifying to their merits; but with the exception of publishing a few pamphlets the directors never took any steps to push the sale. They had an order from the Great Northern Railway to light one of their stations, which could have been done at half the cost of coal gas, but the manager of the Air Gas Company never looked after it. The officials of the railway told him that they were ready to give this company several other stations to light, but nothing had been done in the matter. As to the trials at Richmond, he (Mr. Harrison) showed a process there by which gas that was not commercially useful was carburetted at a trifling cost, and Mr. Eldridge, the engineer of the Richmond Gas Company, certified to that fact. As the Air Gas Company could not continue their operations at Richmond, because the gasholder was required by the gas company, premises were taken at Fulham, and there they achieved a great success. The directors went down to see the trials which he made, and promised to stick to him, but they did not. They were to have taken Dr. Letheby down with them, but they did not; in fact, they had done little or nothing to make the company a success. With regard to the suggestion of Mr. Whiffen he had no objection to offer, and the only condition he asked was that none of the directors should have anything to do with the committee.

Mr. PANNELL said he had been requested by several shareholders to ask what had become of the £114,863 subscribed. Mr. Harrison, in his affidavit, swore that he only received about £6000.

Mr. STARKEY, the solicitor of the company, said Messrs. Harrison received £100,000, and the company had their receipts for that amount. Mr. Harrison, in his affidavit, swore that he had laid out £65,000 of the £100,000 in shares.

After some further conversation, carried on amidst considerable interruption,

Mr. WADE said if a committee were appointed while the present directors were in office the inquiry would not be so impartial as could be desired. He would, therefore, move—"That the chairman and directors be called upon to resign." ("No, no," "Hear, hear," and much confusion.)

No one seconded this motion.

Mr. WHIFFIN then moved, and Mr. PANNELL seconded—"That a committee of five independent shareholders be appointed to ascertain what they believe to be the real position of the company, and whether, in their opinion, it can, and if so, in what way, be carried on at a profit, and that they report the result of their investigations to the shareholders, and that the Vice-Chancellor be requested to postpone making an order to wind up the company until such committee have reported."

Mr. DOLMAN proposed to add the words "that the committee be authorized to employ such experts, whether as chemists, analysts, or accountants, as they may deem necessary to ascertain, and report upon the value of Messrs. Harrison's patents, and the practicability of the invention, and the appliances involved therein—and that the committee make their report in three months time."

Mr. WADE thought the directors ought, first of all, to be called upon to resign.

Mr. STARKEY said the chairman could not put such a resolution.

A SHAREHOLDER said he thought the invention had been tried long enough to satisfy everyone that nothing could be got out of it. What was to be gained by going on as they had been? It was much better to resolve to wind up the thing amicably.

Another SHAREHOLDER remarked that in that case the lawyers would get what little money was left.

Mr. HANDS said he should move as an amendment—"The shareholders in the Air Gaslight Company, Limited, having discovered that the prospectus of the directors by which subscriptions were induced, contained false and deceptive reports—that it disclosed no particulars as to the arrangements between the directors and the vendors that £100,000 was to be paid for the invention, which they stated had been thoroughly tested, but which, upon the first trial, proved to be worthless—are of opinion that the policy of the directors from first to last calls for unmitigated censure; and they do hereby resolve that this company be voluntarily wound up." He said it was not necessary to remind his fellow-shareholders—he meant the *bonâ fide* shareholders—of the warnings given in *The Times* against so much money being paid for an untried invention. Could it be forgotten, too, how the directors went before the Committee of the Stock Exchange and represented that two-thirds of the shares had been allotted when they knew that the truth was only some 12,000 shares had been applied for and foisted upon the public? They had heard something about 5000 shares being taken by the directors.

The CHAIRMAN: And paid for by them and their friends in cash.

Mr. HANDS said he would say no more about the Stock Exchange, because that would come before another tribunal. Could there be a doubt that from the outset the directors knew the utter worthlessness of all their statements. (The speaker continued his observations for several minutes amidst continued interruption, which prevented his remarks from being heard, except by those close around him. When he sat down a shareholder seconded the amendment moved by him.)

Mr. STARKEY said, acting under his advice, the chairman would not put the amendment. The Vice-Chancellor was particularly asked to tell the petitioners what resolution should be proposed to the meeting, and he stated that it should be one for the purpose of ascertaining the wishes of the shareholders as to continuing the business or not.

Mr. LEWIS suggested that instead of asking the Vice-Chancellor to postpone making an order, he should be asked to dismiss the petition. (This suggestion was received with much approbation.)

Mr. HARRISON said he hoped this proposal would be agreed to, as the matter being in abeyance, the business was suffering. Since the petition was filed scarcely any orders had come in.

The CHAIRMAN said he would not offer any remarks upon the speech made by Mr. Hands. That gentleman held five shares in the company, but perhaps he represented a large number of shareholders. At any rate a man holding five shares was entitled to speak; but he had no right to accuse the directors of being a pack of swindlers. After an investigation had been made by the committee about to be formed, if it was found that the board had acted wrongly, it would be very well to call them unfaithful stewards.

Mr. STARKEY objected to the proposal made by Mr. Lewis that the petitions should be dismissed. If that step were taken the chances were that another petition would be filed at once.

Mr. LEWIS, however, insisted upon the motion, as amended by him, being put to the vote; and after much time had been spent in further conversation, the chairman took a show of hands, which resulted in the amended motion being carried, the number on the committee being increased to seven.

The committee was then nominated—viz., Messrs. Abbott, Whiffin, Dolman

Graves, Desmond, Berk, and Colonel Jelph Sharp. These gentlemen were elected, and it was resolved that they should receive such remuneration for their services as a future meeting of shareholders may determine.

Mr. STARKEY said a regular demand having been made for a poll on the question whether the petitions should be dismissed or adjourned, the chairman had fixed that the poll should take place on Tuesday next (this day) at the company's offices, between the hours of ten and four.

The meeting then broke up.

DUBLIN (CORPORATION) WATER-WORKS.

LOCAL GOVERNMENT BOARD INQUIRY.

The Corporation of the City of Dublin having made application to the Local Government Board for a provisional order to increase their borrowing powers, under the Water-Works Act, 1861, Captain ROBINSON, an inspector of the board, has been holding an inquiry at Dublin during the past week, and hearing evidence in support of, and opposition to, the petition. The first sitting was held on—

MONDAY, JAN. 19.

Serjeant ARMSTRONG and Mr. NORWOOD appeared on behalf of the corporation; Mr. MONROE appeared for the Kingstown Commissioners, and Mr. JAMES HAMILTON, Q.C., on behalf of Mr. M'Evoy.

The INSPECTOR opened the business by observing that the inquiry was held in pursuance of instructions given to him by the Local Government Board, and under the provisions of the Local Government Act of 1871, with relation to a petition which had been addressed to them by the corporation of the city of Dublin for a provisional order empowering the corporation to put in force the provisions of the Lands Clauses Consolidation Act in respect to the taking of certain lands in the county of Wicklow, to borrow £50,000, in addition to the sum at present authorized to be borrowed under the Dublin Corporation Water-Works Act, and to reborrow such sums as may from time to time have been paid, and also for making certain amendments in the existing Acts. His instructions were to inquire, under the 4th section of the Local Government Act, as to the propriety of assenting to the prayer of the petition for power to put in force the provisions of the Lands Clauses Consolidation Act, and under the 5th section, of the genuineness of the petition, and in respect of the several matters mentioned therein. Due notice of the inquiry had been published, and in that notice he intimated his intention of receiving objections to the petition, or any proposal contained therein. He had received three objections, which he should refer to by-and-by; but he thought the convenient course would be for the petitioners to prove the genuineness of the petition in the first instance, and he would then read the objections which had been addressed to him, and receive and consider any others which might be submitted.

Mr. GRICE, assistant to the town-clerk, then read the resolutions of the council authorizing the application to be made to Parliament and to the Local Government Board, and stated, in reply to Mr. Norwood, that in pursuance of the resolutions of the council, the town-clerk had attached the city seal to the petition to the Local Government Board.

The INSPECTOR stated that this was sufficient. He added that he had received an objection from Mr. Kelly to the proposed increase of taxation for fire brigade purposes; an objection from Mr. Holbrooke, on behalf of the Clontarf Township Commissioners, to any change in reference to the water supply that might be prejudicial to their rights or interests; and also an objection from Mr. J. E. Vernon, on the part of the Pembroke Township Commissioners, which was of the same import. Objections were also lodged by the Blackrock Town Commissioners with respect to the proposed clauses dealing with the water supply; by the Kingstown Commissioners and the Bray Township with regard to the water supply; by the ratepayers of North Ballinacor to the purchase of lands for the proposed Vartry works, and by Mr. M'Evoy to the jurisdiction of the Local Government Board to deal with the subject-matter of the petition of the corporation.

Mr. LAWLOR, on behalf of the Kingstown Commissioners, asked for an adjournment, and after some conversation, an adjournment was made to the following day.

After the adjournment, a conference was held between the chairmen of the townships of Pembroke, Blackrock, and Dalkey, and the members of the Water-Works Committee, at which the following document was, after a brief conversation, drawn up, in order to be placed before the inspector this morning, when the three townships will withdraw their opposition:—

"At a conference held upon the 19th of January instant, between the chairmen of Pembroke, Blackrock, and Dalkey, and some of the officers and other members of said townships and the Water-Works Committee, it was agreed that the terms set forth in the 6th clause of the proposed bill be accepted as the terms to be embodied in the conditional order, with the addition expressed in the resolution of the council of the 17th of January inst.—viz.: 'That the price shall not exceed 4d. per 1000 gallons, and shall not be less than 3d. per 1000 gallons,' as a substitution for the sliding scale in the clause of the said bill."

TUESDAY, JAN. 20.

The INSPECTOR at the opening of the court read a petition which he said had been forwarded to the Local Government Board, and signed by Mr. M'Garry, C.E., Mr. Bridgman, C.E., and Mr. Peter Roe. The petitioners requested that a full inquiry should be made into all the expenditure of the Water-Works Committee, as they understood there were numerous expensive and useless offices in connexion with it which, if abolished, and a more economical system of management adopted, would obviate the necessity of seeking for additional borrowing powers. The petitioners also stated that they wished to oppose the granting of any additional fund for the maintenance of the Fire Brigade, on the ground that the brigade was more expensive than those of towns like Liverpool, Manchester, and Glasgow, notwithstanding that there was always a high pressure of water available.

Serjeant ARMSTRONG then stated the case for the corporation. He said the application was for a Provisional Order to empower the corporation to put in force the provisions of the Lands Clauses Acts, in respect of the purchase and taking of lands otherwise than by agreement, with respect to a certain piece of ground situate in the parish of Derrylossary, and county of Wicklow, containing 5 acres 1 rood, statute measure, or thereabouts, which the petitioners require for the purpose of obtaining a supply of sand for the filter-beds in connexion with their works for conveying, collecting, obtaining, and storing the water taken from the river Vartry, and supplying the same to the inhabitants of Dublin and its vicinity. That was a matter clearly and directly within the scope of the water-works project. It was necessary for those great works to have filter-beds, but heretofore the supply of sand had been casual, and what the corporation desired was to secure to themselves a supply upon these five acres which in its character would be permanent for this very necessary purpose. The Water-Works Act conferred on the corporation the power to purchase land by agreement only, and that was the reason why they asked that compulsory purchase might be extended to this particular case. These were church lands, the fee was vested in the Commissioners of the Church, and they, being a public body, and acting in a very delicate position in the present state of public affairs, were advised to decline making this a matter of agreement. While they entirely concurred in the wisdom and prudence of this project, they desired not to be asked to become parties to a contract. The matter was recommended by principles of economy and convenience, and he did not anticipate any serious objection would be made to it. The next head of the petition was this—The corporation sought "to borrow a sum or sums of money, not exceeding in the whole the sum of £50,000, upon the security of the surplus rates or income now leviable or receivable by them under the provisions of the Dublin Corporation Water-Works Act, 1861, and the Dublin Corporation Water-Works Act Amendment Act, 1866 (in addition to the sum of £509,000 the petitioners were empowered to borrow, and have borrowed, under the provisions of the said recited Acts), and to apply the said sum or sums so to be borrowed towards the enlargement and improvement of the works heretofore constructed, or for the purposes of the said Acts, or any of them authorized, and from time to time to enable the petitioners to re-borrow such principal sums as they may have paid off under the provisions of the said Acts." In reference to that, he thought he was warranted in saying that nothing was more usual, in a vast scheme such as the water supply of Dublin was, than to find matters cropping up requiring the expenditure of money which could not be thought of in the original calculation. The exact expenditure could not be calculated to a nicety. The utmost that could be done was to approximate on a series of calculations such as occurred to the professional gentlemen. Before it was seen that the sum for which power to borrow was now asked would be necessary there had not been a contract entered into with any of the townships; but now they supplied, under contract, the Pembroke, Blackrock, Kilmainham, Clontarf, Bray and Dalkey, Killiney, and Ballybrack townships. All these contracts had been entered into, and these large districts supplied with water, since the construction of the great reservoir at Stillorgan, and it was not foreseen at the time of the construction of that reservoir these townships would become tenants or contracting parties in reference to the water at all. It was necessary, in the opinion of Mr. Neville, the engineer, to enlarge that reservoir, which would take £22,000. With regard to the purchase of the five acres, Mr. Neville thought a sum of £500 would be necessary. As regarded the filter-beds, not yet completed, and the execution of which was suspended for want of funds, they would take a sum of £7000. And it would be explained that the exigencies of the water-works compelled the corporation to draw to the extent of £22,000 upon funds which must be recouped. With regard to the security which the corporation were in a position to give lenders, they had a net surplus of income over and above all expenditure of £4700, and that afforded an ample margin for so small a sum as £50,000, and he was told it was increasing, and likely to increase. It was highly desirable, also, that as the corporation went to great expense in procuring a supply of pure water, it should be kept pure. They, therefore, asked the Local Government Board to confer upon them additional powers for the prevention of waste of water in the districts which they are authorized to supply, and for the protection and prevention from pollution of the waters, and the sources from which such supply is derived. That there was a vast and pitiable waste daily going on in Dublin was ascertained beyond a doubt, and the corporation were powerless to prevent it. They were bound to keep up the pressure, and they must rely on the kindliness and economy of the citizens to preserve it; but, nevertheless, from the negligence of servants or other preventible causes, the waste was going on to considerable extent. The powers of prevention were considerable. If persons were discovered wasting the water the corporation might summon them, and in that way they had endeavoured to stay waste; but something more was necessary. If the people of Dublin permitted the water to run away in a perennial stream, the officer of the corporation ought to have power to enter their premises and make the repairs which were necessary, and recover the expense in a summary way. As to the pollution, they thought there were in the neighbourhood of the Vartry some factories which discharged refuse into the water. They knew that under the sanitary code there were means of preventing pollution, if they were aware of it, but they had no power to enter into the suspected premises to ascertain whether they were working in such a way as to contribute to the pollution of their water supply. But, in order to guard millowners and factory owners from unnecessary intrusion of their premises, the corporation thought that they should not be warranted in having a visible inquiry made by their officers unless there was a sworn information first lodged by some person before a magistrate, stating the belief of the party that an inspection would be necessary to ascertain whether pollution was going on or not. The matter would be in upright and cautious hands, and a sworn information would be but a reasonable stipulation. The next requirement was the power to charge and recover from the commissioners of the several townships supplied with water, either under the provisions of their local statutes or by special contract, a meterage rate for all water taken by them in excess of the statutable or contract allowance to which they were entitled for domestic purposes or for the public purposes of the respective townships, and to enable the petitioners and the said commissioners to arrange on such financial terms as might from time to time be agreed upon between them for the distribution, for other than domestic purposes and the public purposes of the said several townships respectively, or some of the water supplied to them, and for such purposes, if necessary, to amend the said Acts. He thought the inspector would agree with him that nothing could be more reasonable. He understood that the chairmen of some of the townships which had lodged objections had acquiesced in this proposition after a brief explanation from the chairman of the Water-Works Committee. At present the corporation were under contract to supply the different townships with a *per capita* allowance of 20 gallons a day, and if they required more the corporation thought they should be paid for it. The representatives of the three townships at once appreciated the justice of the proposition, and withdrew their opposition. The next stipulation in the petition was to extend the time for the construction of the works for the term of three years from the expiration of the time limited by the Dublin Corporation Water-Works Act, 1870. If additional money was required for additional works, it would necessarily follow that additional time was required, and, consequently, he was sure there would be no difficulty in obtaining the sanction of the Local Government Board to the extension of time. And when he said that one of the objects was to enlarge the Stillorgan reservoir, having regard to the great additional supply of water they had undertaken to give, and another to complete the filter beds, he did not anticipate any difficulty on that point. The next matter they asked was that, for the purpose of securing the purity of the water supply to and from their reservoir, they might be empowered to construct upon the lands at present in their possession accommodation works for the washing of sheep, and for the purposes connected therewith, adjoining their storage reservoir at Roundwood, in the county of Wicklow. They had the land for the sheep-washing station; they did not seek to make it incumbent on the farmers to repair there, but they hoped to coax them to resort to that ground, which would be well provided with water, and give up the practice of washing their sheep at places higher up on the stream. They did not want to put it on a sanitary ground, but at the same time they believed the practice was objectionable—that if given up it would have a sanitary tendency, and they hoped it would have a good result. The expense would be trifling, but it showed with what anxiety and activity of mind the Water-Works Committee had looked into these small matters. The corporation next wanted power to contract with the directors or managers of public, official, charitable, or other institutions for a supply of water upon such terms, and subject to such conditions, as might be mutually agreed upon. He believed there was nobody taking exception to the power thus sought. It did not appear that the power of supplying water extended to their great hospitals and asylums, and other public institutions, and it was highly desirable they should be supplied with the Vartry water. The petition next prayed, "That the principle upon which lands occupied as reservoirs, or by conduits, or with pipes for conduits, or other works for the conveyance of water to or through the city of Dublin, are

to be valued for rating purposes may be clearly defined and specified, and that for such purpose the several Acts regulating the same may, if necessary, be amended, or the provisions thereof defined." A contest had been going on between various public bodies in the city and the Commissioners of Valuation as to the principle on which matters that were referred to should be rated. Appeals had been brought before the recorder, and some cases had been decided in the superior courts. The corporation did not ask to be in a better position than any other public body in reference to this matter. The petition finally asked that the Dublin Corporation Fire Brigade Act, 1862, might be amended, so as to enable the petitioners henceforward to apply, for the purpose of maintaining a fire brigade, with proper appliances, in the city of Dublin, the sum of at least 1½d. in the pound of the annual value of the property in respect of which the public water-rate is applotted and levied. By the Dublin Corporation Act of 1862 this 1½d. in the pound was the sum allocated for the construction and maintenance of that force, and it was to be reduced to 1d. at the end of ten years. The ten years had now expired, and the reduced rate of 1d. would not support the men at all. In every respect he though there would be a clear case made out for granting the order in regard to all the matters embraced in the petition.

Mr. *Park Neville*, city engineer, was then examined as to the necessity of taking the five acres of land for the purpose of securing the supply of sand for the filter-beds.

Mr. *Nugent Robinson*, city treasurer, was examined as to the liabilities of the Water-Works Committee. He stated that at the close of the financial year in August last they amounted to £22,000. They principally consisted of Lloyd's Bonds, issued to the contractors for works executed. He gave in detail the several sums which made up the £22,000. All the expenditure was strictly within the scope of the Water-Works Act. It was not originally contemplated, but arose as fresh contracts were entered into with the townships. It was necessary the money should be borrowed by the corporation. The interest would be paid out of the surplus of income over expenditure, and after providing for the interest on the other loans.

In reply to Mr. HAMILTON,

Mr. *Robinson* stated that a considerable portion of the £22,000 was expended on new works, which the committee had to execute from time to time by direction of the Government engineer.

WEDNESDAY, JAN. 21.

Mr. J. E. VERNON, the chairman of the Pembroke Township Commissioners, withdrew the opposition which had been entered on their part. After the explanation which had been given with respect to the supply of water, he thought it was only reasonable that they should pay for the excess over the 20 gallons per head which they were allowed. The price was the only point of difference between them, and that having been adjusted, there remained no ground for objecting to the petition.

Mr. WILLIAMSON, on the part of the Blackrock Township, also withdrew their objection, for the same reason.

Sir JOHN GRAY, M.P., the chairman of the Water-Works Committee, was then examined. After stating the objects sought by the provisional order, said that the committee had taken vigorous measures to prevent the waste of water, which was very great, and had instituted legal proceedings against parties committing it. The difficulty they had was that when the inspectors went to a place and saw the waste going on, and prosecuted the occupier, it still went on day after day, until the repair to the stop-pipe was made under the magistrate's order. The waste under the present system could not be stopped, and what they wanted was power to go in by their own officers and repair the waste at once themselves, which they could do at a trifling cost, and recover it afterwards. These additional powers were very trifling, and there was nothing of an inquisitorial character connected with them. At present the corporation had all the powers which might be called inquisitorial, as they had power to send their officers into any house in which they might suspect a waste, and have him examine all the apparatus for the drawing of water. He had power to enter any house he pleased. Then they had power to order the kind of material—the class of cocks that were to be used—also with regard to the fittings. They had also the power of repairing, but they could not repair except on giving 24 hours notice. That was an injury to the householder himself, for his house might be injured during that time by the leakage going on—damaging the foundations, perhaps the walls and decorations of the house. In some instances they could repair the injury at a cost of a penny or twopence and in a few minutes, and the inconvenience would be but trifling. They wanted power, on a brief notice, to stop the waste of water at once, and repair the pipe, and charge him by summary proceeding for the cost. Where there was a visible waste there should be no notice. They asked for power at once to repair defects at the expense of the occupier, and recover before a justice. At present they had power to cut off the water, but they did not like to exercise such power, as it would be injurious to the comfort of a householder. Instead of that they thought it would be better by summary process instantaneously to repair, giving the option to the occupier to do it himself if he preferred. The committee did not ask for such powers outside the city, where the districts were under some local corporate or sanitary authority. With regard to the prevention of water from pollution, the only power they asked was where they had an absolute sworn information that pollution was going on within the precincts of any establishment, and getting into their water. In that case he thought they should have power to send in their authorized officer. Their district extended to the source of supply as well as the districts where they had to supply water, and there they had great powers to stop pollution; but it sometimes happened that pollution was going on within a walled district, and there they had no power to enter. If the pollution was very visible, and they could trace it, they had power to prosecute under the Sanitary Acts. Where they did not see the pollution they wanted power to enter and inspect, in order to ascertain whether there were grounds for a prosecution under the Sanitary Acts. Those were all the additional powers they sought in reference to waste and pollution. When the original powers of the corporation in reference to the water-works were obtained, there was a very large allowance for waste that was unavoidable. He did not know that they made a calculation by per centage, but they knew by other water-works that there would be a considerable waste. The reservoir at Stillorgan contained six or seven days supply, and their engineer wanted to make it very nearly double. If the officers of the corporation did their duty, and the citizens did theirs, there would be no necessity to enlarge the reservoir; but they found from experience it was impossible to get the citizens to do their duty in regard to stopping waste—though, from the steps taken by the corporation, they had brought it down from nine million to seven million gallons a day—and hence they must double the size. He would rather have a dozen plumbers than the same number of policemen acting as waste inspectors. The power they asked was to get proper means to stop the waste. It had taken three years of very anxious work to get down about a million and a half permanently, and if they went on so for six or seven years the result would be a water famine which would cause great inconvenience and loss to the people.

In reply to Mr. NORWOOD, *witness* said there were eight townships supplied with water, and they had taken water largely in excess of their statutable allowance. The power sought with reference to them was that whatever was metered to them they should pay for. They supplied water by meter, for the purpose of ascertaining that they gave the exact quantity contracted for, and the corporation asked that if they took more than that they should pay for it. They supplied them with water for no other than domestic purposes. At first they allowed them to use whatever they liked without charge, but they went a little too far, and they tried to check them by remonstrance, and when they did so they found the Pembroke township took rigorous measures to stop the waste, and with such results that they took less than the statutory quantity, showing that if all the townships acted in a similar manner there would be a stop put to the excessive waste. The principle they wanted to introduce was adopted in Manchester and other places. The power they asked had nothing compulsory about it. It was simply to enable them to give the townships water if they asked for it in writing, and charge them such terms as they could agree on; and in their bill there was a clause enabling the corporation to make special arrangements in case of fire and for special emergency. They would make them a present of any water they wanted for such purposes, and it was not their intention to charge a penny for it.

Mr. NORWOOD: You state in the petition you wish you had power to arrange with the township and other persons for the supply of water for manufacturing and other purposes. Will you explain that?

Witness: There were large quantities of water used in the Pembroke township by laundresses, for instance. This was used practically not for manufacturing purposes. It was used for commercial purposes, and they made a large profit of it, and they used a large quantity in excess of the statutable quantity. The corporation wanted power to arrange with the township, that if they economized the water they should have the power of selling it, which they had not now, so as to give them every stimulant to economize. The object was not to sell them more water than they had, but to induce them to save it. The corporation supplied the shipping at Kingstown. That was specially reserved by the Act of Parliament. They supplied the shipping by meterage, and it had nothing to do with the contract with the Kingstown Commissioners, except that they had power to send the water through their pipes. Witness then gave a detailed statement of the excess in the different townships for last year, amounting on the whole to 170,753,000 gallons. There was a statement made by some of the townships to the effect that the corporation wanted to break through their contracts, and then they all entered into an opposition. The moment, however, three of the townships knew the real state of facts they withdrew their opposition. The corporation were the trustees of the property of the citizens, and lest any person might bring them into the Queen's Bench to prevent them giving a single drop of water in excess of the quantity they stipulated for, they thought it their duty to get a power enabling them to accommodate the townships, if they wanted the water, without running that risk.

Mr. HENRY PARKINSON said there were parties complaining of a want of water, though the officers of the corporation said they were getting more than they were entitled to.

Witness read a return, showing that the Dalkey township had used a large quantity in excess of the statutable allowance. In addition to the Pembroke, Blackrock, and Dalkey, he believed the Clontarf township seemed to think the principle of the surcharge was equitable—at least they did not oppose it.

Witness was cross-examined at some length by Mr. MONROE in respect to the contrast between the corporation and the Kingstown township, the cost of laying down the piping in order to supply it, and the cost for the increased supply. He stated that from his investigations he believed the supply of 20 gallons per head was three times more than what was required for domestic purposes. If they did not get the additional powers and succeed in reducing the waste in Dublin, they would have to erect a new reservoir. It would be impossible to go on without it.

To Mr. ROBINSON: They would be perfectly ready to enter into a mutual agreement with the Kingstown Commissioners to enable them to supply the shipping themselves, and they would be glad to be relieved of it. All the corporation got out of the shipping was £52 a year.

Mr. *Neville* was next examined, and stated that it would be necessary to extend the term for constructing the works from 1875 to 1878.

Sir *John Gray* was recalled and examined relative to the accommodation works for the washing of sheep. He said they proposed to give the farmers every facility for it, but they did not want to compel them to wash their sheep there. The object was *pro tanto* to ensure the purity of the waters, as they might be more or less affected by such an operation going on. The expense would be £100 or £150. As regarded the power to contract with charitable institutions, it was very desirable to have it. They were giving them the water at present, but a question had arisen on it, and they wanted without objection to supply it. He believed it was a very reasonable object, and if carried out would be of great convenience to the institutions, many of which were pressing them to enter into contracts with them. In reference to the principle on which the means, &c., should be voted—he stated that they only wanted that it should be at a rent which a solvent tenant would be likely to pay, taking the property from year to year. He next referred to the proposed power with respect to the fire brigade, and stated that a penny in the pound was not at all adequate for the maintenance of the brigade. They were obliged to resort to special means in order to keep the men together, which it will be better to avoid for the sake of their efficiency. The committee found that 1½d. in the pound would not be sufficient to enable them to carry out all their views, but it enabled them to keep up a good staff. That would give them something like £3200, which was a very small sum compared with what they expended in London. The insurance companies pressed on them the necessity of keeping up the efficiency of the brigade. He regarded the power which they sought with respect to this matter as highly necessary.

THURSDAY, JAN. 22.

Mr. *Nugent Robinson*, city treasurer, was recalled. He stated that the present assessable valuation of the city was £627,509 per annum. The sum proposed to be assessed on the mains was £4400 a year. There was an arrear of £11,864 16s. 1d. for two years and a half, and the corporation had lodged an appeal against it. They contended that they had no right to be charged at all. He could not say what was the value of the plant of the water-works on which it was proposed to assess the £4400. The increase in the assessable valuation of the city to £627,000 would add £2000 a year to the £4700 which he calculated would be the excess of income over expenditure of the Water-Works Committee. The committee provided last year for the fire brigade at the rate of 1d. in the pound. That produced the sum of £2300, and at the rate of 1½d. in the pound the amount would be increased by £1150. They had placed their loans, on most favourable terms, on the market. The last was for 20 years, and, with the rapidly increasing income, he calculated that the income of the Water-Works Committee would be over £50,000 a year. They were not to commence to repay the recent loan until the expiration of 20 years, during which time they only paid the interest on it. Last year they received £23,000 at the rate of 1s. in the pound. As a matter of fact, he found that up to Dec. 31, 1873, they received £31,272 from the public and domestic water-rate. That was £1500 in excess of his estimate for 1874.

To Mr. NORWOOD: In his estimate of the expenditure for this year he took credit for the payment of interest at 5 per cent. on the £22,000 now due. In calculating the prospective liability on the £50,000, the interest on it that they had to take into account was £1701. They ought to obtain the money at 4½ per cent., with ½ per cent. for placing it on the market. The income of the Water-Works Committee from the townships was steadily increasing every year. It had risen from £700 and odd, four or five years ago, to £4500. The income from brewers and distillers and manufacturers had increased from

£4000 to £12,000 per annum. At the present moment there was a proposition from one manufacturer to increase the value of his supply to considerably more than £800 a year.

Mr. *Thomas O'Donnell*, city accountant, was examined, and verified the account of the receipts and disbursements of the fire brigade department for the year ending August, 1873.

Cross-examined by Mr. BRIDGEMAN: The salaries paid to officers were £431, and the wages to the men were £1377 11s. 4d. This expenditure was calculated on the reduced staff. Some of the men had been taken off for the performance of other duty, and their wages were paid out of the general fund.

Captain *Ingram*, the chief of the fire brigade, having been examined as to the necessities of that branch of the public service, and the powers sought for in this respect,

Mr. *Barry* gave evidence in reference to the appeal from the valuation of the mains of the Water-Works Committee. He stated that he had heard there was a surplus on the water-rate of £4700 a year. *Primâ facie* that would be a security for the £50,000. He had taken the advice of counsel as to whether liability would attach to that money if the mains were held to be rateable, and he was advised that it would not be applicable to the payment of the assessment.

Serjeant ARMSTRONG read the opinion, to the effect that there was no right or power to pay the assessment out of the water-rates, and to do so would be a misapplication of the funds.

Witness said, in his opinion, if it was recoverable, it should be paid out of the borough fund. They rested the appeal on the ground that they were not liable at all. He had made a calculation of the state of the borough fund for ten years, and, in his opinion, there was a considerable surplus on that fund. He could not state from his own knowledge whether there was a surplus for any purpose.

Serjeant ARMSTRONG said the corporation had power to make a borough rate at any time.

This closed the case in support of the petition.

Mr. HAMILTON then stated the case on behalf of Mr. M'Evoy. He said his client came forward to oppose the application because he found it was proposed to add to the already large sum which was raised for water purposes alone. If the sewerage works were carried out, the amount would exceed two years assessable value of the city property, and the inspector was limited by the Local Government Act to two years assessable value. He was of opinion this whole proceeding was futile, because the corporation asked powers far beyond what it was in the power of the board to grant. They had lodged a bill to effect the same purpose, and a constitutional principle arose on that point. Parliament very jealously guarded its privileges, which would be interfered with if this provisional order was made. The powers sought for were vague and indefinite, and of a very stringent character, though, no doubt, the object, the prevention of the waste and pollution of water, was a very beneficial one. Referring to the terms of the Water-Works Act, he contended that the committee had ample power under them for every needful purpose. He submitted that the inspector had no jurisdiction to entertain the question of the purchase of the piece of land in the county of Wicklow. The inquiry on that point ought to be local, and he was not sitting in his proper place. The Act was a local one, and was never intended to apply to an area outside that of the governing body. They asked for power to contract with public institutions for supplies of water, and there was nothing to show that the returns for those supplies were to be paid to the city. The corporation had made a very unconstitutional proposition in endeavouring to introduce a bill to control the question which was then before the highest court in the realm, the Court of Queen's Bench, in reference to the defining of the property liable to rates. This would be doing away with the liberty of the subject, and the whole Legislature of this kingdom would not attempt to do such a thing. The provisional order would be, in fact, legislation, because no individual would incur the responsibility of asking Parliament to refer any proposed bill to a committee, whereby persons opposing the bill might be called on to pay the whole costs of the proceeding. As to the security the corporation were prepared to give for the additional loans they sought, where was the evidence of the existence of the surplus of £4000 a year mentioned by Mr. Nugent Robinson, the city treasurer? In the first place, there must be deducted out of that sum the £1100 which the corporation wished to devote to the better maintenance of the fire brigade. He must admit that the services of the brigade had been most invaluable to the citizens, and that the salaries of the men were much too small. In conclusion, he submitted that there were certain limits within which the Local Government Board must act, and if they extended their powers beyond these it would be productive of the greatest mischief and confusion.

Mr. MONROE was next heard on behalf of the Kingstown Commissioners, and adverted at considerable length to the proceedings and negotiations which had taken place in reference to the supply of water to the township. He observed that the original contract was to supply it at the rate of 3½d. per 1000 gallons, and a halfpenny additional for shipping and manufacturing purposes; but by the Township Act of 1869 that contract was done away with, and Sir John Gray had influence enough with the House of Lords to get a clause introduced whereby the rate was to be 5d. per 1000 gallons, and the power to sell for manufacturing and shipping purposes was taken away. The corporation laid down the pipes at a cost of £6000, and he asked the inspector to agree with him that the additional three-halfpence—the difference between 3½d. and 5d.—was to cover the cost of the piping. At an annual repayment of £300, the money would be paid off in 35 years, and he contended that at the end of that time the corporation would have an annual profit of £75. The learned counsel entered into a calculation to show that they got very little short of 1000 gallons for 2d., at a rate of 5 per cent. on the rateable population of Kingstown in 1871, and, notwithstanding that, their proposition now was to charge not more than 4d. and not less than 3d. for the excess over the statutable allowance. He contrasted the rate in Kingstown with what it was in Bray and the other townships, and said that, inasmuch as the corporation had a valuation every year, the amount they received for water-rate was always increasing, whereas there was only a census of the population of Kingstown every ten years. He submitted that, in the first place, they ought not to be charged at all, having regard to the fact that they were paying at the rate of 5d.; and secondly, if they were to pay any more for extra water, they ought not to be charged more than what the contract rate was fixed at in 1869.

FRIDAY, JAN. 23.

Mr. *Robert J. Eunis*, secretary to the Kingstown Improvement Commissioners, was examined in support of their petition. He said he was aware of the contract entered into by the commissioners and the Water-Works Committee on the 5th of April, 1869. Under that the corporation were bound to supply water for domestic purposes at 3½d. per 1000 gallons, and there was an extra halfpenny for manufacturing and shipping purposes. It was understood that the commissioners were to lay down the pipes from the Stillorgan reservoir to the boundary of the township. They received estimates which showed that they could have done it for £3800—certainly under £4000. The corporation eventually laid down the pipes under the Act. The township of Dalkey was supplied with water which was carried through those pipes. Assuming the rate to be a 5d. rate, the cost would be 1d., or 970 gallons for 2d., being a shade over 2d. per 1000 gallons. There were public fountains throughout Kingstown. The population was much larger in the summer than during the winter months. The total valuation of Kingstown in 1859 was £59,977 10s.; in 1870, it was £59,884; in 1871, £60,696 5s.; in 1872, £63,965 5s.; and in 1873, £66,302 5s. In 1861, the census was 18,081; in 1871, 18,461. The valuation in 1861 was £52,000. The fluctuating population of Kingstown had increased much more rapidly than the resident population. The Kingstown Commissioners would not consider it fair that the census should be taken only once in ten years and the valuation every year. In 1869 the Committee of the House of Commons fixed the rate at 4d. in the pound. The commissioners were to lay down the pipes from Stillorgan reservoir to the boundary of the township. The rate of 3½d. was for domestic purposes only. That rate was subsequently raised by the House of Lords committee to 5d. The corporation took a large number of skilled witnesses to London, and they were able to persuade the committe to raise the rate. The corporation supplied the townships of Pembroke and Blackrock at 3½d. If this bill were carried into law, and the rate of 5d. continued, at the end of 35 years the corporation would have a permanent profit of £375 per annum.

Cross-examined by Mr. NORWOOD: The commissioners received an estimate of £3800 for laying the pipes from Stillorgan to the boundary of the township of Kingstown, but of course the actual cost would be a more accurate criterion. The sailors coming into Kingstown harbour were in the habit of taking water from the public fountains. This was not the case at places like Dalkey, Bray, and Pembroke, where there is no Harbour. There was an inspector of water-works in the township, and he turned off the water at the time the sailors were in the habit of coming to take it. There was no legal method of preventing the sailors taking the water; but the inspector looked after the waste.

Mr. NORWOOD: You say your population increases in summer; but would you be surprised to hear that the waste in winter is greater than in summer?

Witness: No; I have heard the corporation had to pay £6000 for the rights of the promoters of the Act passed in 1859 for supplying the township with water.

Mr. NORWOOD: Are you aware that for six months ending in May there was a waste in the township of 12,208,000 gallons, and in December, 13,675,000?

Witness: I have no means of testing the accuracy of the figures, but if the corporation officer says that is so, I believe him.

To Mr. ROBINSON: The water supply to the ships was given from hydrants, and was charged for per 1000 gallons.

To Mr. M'GARRY: We have been paying 1½d. in the pound for laying down the pipes since the Act of 1860 came into operation. That rate would produce about £390 a year on the valuation.

Mr. *Francis Arthur Doyle*, town surveyor, was examined as to laying down the supply-pipes of the township. The estimate for the 12-inch pipe was £3846. That description of pipe would have been sufficient for the Kingstown supply, but the corporation laid down a 15-inch pipe at a much greater cost. The quantity of water used in the township last year was 147,185,000 gallons, which was about 10 per cent. in excess of the statutable supply. He could not see any reason why the commissioners should pay a fraction more than they had at present—namely, 2d. per 1000 gallons.

Mr. ROBINSON: I understood that your excess is at present 26 millions of gallons?

Witness: No; in making that calculation the corporation had taken a population less by 2000 than they should have done.

Sir *John Gray* said there was a difference in the area of the districts taken by the commissioners and the corporation.

Mr. *Doyle* said he believed that if the population was taken for the entire year, and a calculation made, it would be found there was no excess of supply.

Mr. NORWOOD: You dispute the accuracy of the corporation meters, but did you ever complain?

Witness: I expressed a wish that the commissioners should test the meters.

Mr. NORWOOD: Did the Water-Works Committee suggest that you should have check meters?

Witness: There was something of the kind suggested, but it was not done. The returns made by me of the water supply in the months of May and December differ considerably from those given by other witnesses. My returns are—For the six months ending in May, 11,743,000; and in December, 16,961,000 gallons. The commissioners are willing to pay 2d. for excess supply as at present.

Mr. *Myles Kelly*, Kingstown, was examined relative to the loss of water to the ratepayers in consequence of the sailors in harbour taking supplies to their ships from the public fountains. He stated that he had seen them take the water in barrels, and there was no means of preventing them. The corporation had not sufficient powers of protecting their property by compelling the ships to take water from the proper hydrants.

Mr. *Coughman*, water inspector, was examined, and stated that he did all in his power to prevent waste of water, but he had not been successful in his efforts to prevent the sailors taking water from the fountain.

Mr. ROBINSON said the next objections in order were from Bray and the ratepayers of the barony of Ballinacor.

There being no appearance in support of these objections,

Mr. NORWOOD said the objection of the ratepayers of Ballinacor had been withdrawn.

The objections of the Clontarf Commissioners were then gone into.

Mr. VERNON, chairman of the Clontarf Township Commissioners, read a statement to the effect that the commissioners concurred with the Water-Works Committee in the advisability of putting a stop to the waste of water, but they considered that the powers which the committee had already were amply sufficient for that purpose. They protested against being charged with the present rate of 4d., and thought that some concession ought to be made to them in the order now under consideration, and that 2d. per 1000 gallons would meet all the requirements of sound policy and justice. Mr. Vernon also urged that the question of meters should be arranged, to prevent disputes in future.

Mr. *Tickell* was examined, and submitted that the Clontarf township ought not to be charged more than it was at present, for it was impossible they could have got 20 gallons per head on the estimated population. They had offered 3d. for the excessive supply, because they were anxious the matter should be settled amicably. If they used more than 20 gallons he did not think it would be fair to pay for it. The proposition to pay 3d. had been made since the inquiry had commenced. He thought it would be unwise to give the Water-Works Committee more power to levy money.

Mr. *O'Donnell*, city accountant, gave a return of the estimated cost to the corporation of laying down the pipes for each of the townships:—Pembroke, 1¾d.; Blackrock, 2¾d.; Bray, 1¾d.; Dalkey, 2¼d.; Killiney and Bally, 3 ⅜d.; Clontarf, 2¾d.; Kingstown, 2¾d.

Sir *John Gray* said the object of the committee in seeking to charge for the excessive water supply was that the townships might contribute something towards the expense of erecting additional works rendered necessary by the great quantity of water used by them, for otherwise the whole cost would be thrown on the citizens. The necessity for the works had arisen in consequence of the great supply to the townships. They were quite willing to strike out the name of any township that did not wish to be included in the arrangement respecting the excess supply. The corporation had no other object in view than to avoid a water famine. In answer to the inspector, he said the corporation wished it to be entirely optional with the townships whether they would take the extra supply or not. He had been offered by several of the Kingstown Commissioners to compromise the matter for 3d. per 1000 gallons.

This closed the evidence on both sides, and Serjeant ARMSTRONG having replied on the whole case, the INSPECTOR said he would forward the evidence and his report to the Local Government Board with the least possible delay.

ACCOUNTS OF THE METROPOLITAN WATER COMPANIES, FOR THE YEAR 1872-3.

Statement of Share and Loan Capital, and Expenditure on Capital Account.

Companies.		Total Share Capital authorized.	Share Capital Paid up.	Loan Capital authorized.	Mortgage and Debenture Debt.	Total Share and Loan Capital authorized.	Total Share and Loan Capital Paid up.	Total Expenditure on Capital Account.
		£	£	£	£	£	£	£
Chelsea	For the 12 months ending March, 1873.	855,000	707,305	213,750	169,600	1,068,750	876,905	851,877
Grand Junction		1,000,000	849,400	250,000	201,200	1,250,000	1,059,600	1,056,584
Lambeth		1,250,000	812,485	248,000	237,150	1,498,000	1,049,635	1,023,660
Southwark and Vauxhall		1,518,000	1,155,660	482,000	381,741	2,000,000	1,537,401	1,544,483
West Middlesex		1,155,066	848,754	200,000	30,000	1,355,066	878,754	881,455
East London	For the 12 months ending Dec., 1872.	1,820,000	1,625,360	200,000	213,217	2,020,000	1,838,777	1,868,814
Kent		600,000	526,960	150,000	42,000	750,000	568,960	496,596
New River*		2,019,958	1,697,418	1,000,000	1,031,453	3,019,958	2,728,901	2,684,134

* The New River Company's shares, as established by charter, are freehold, and are divided into moieties—one moiety, or 36 parts, being held by the incorporated "adventurers;" the other moiety, or 36 parts, being originally held by King James I., and subsequently by persons now called King's Shareholders, who are not incorporated with the adventurers. Both these moieties are again subdivided, and held by numerous persons, and being real estate, are subject to entail and to trusts for minors. By this company's Act of 1352 the amount "expended" by the company in their works "then in existence" was declared to be £1,519,958 and upwards, and the capital of the company was deemed to be £1,519,958. This Act did not, however, create shares or a share capital, or alter or affect the nature, rights, or status of the property as existing under their charter, the rights under which charter are, by the same Act, expressly reserved. This Act authorized the taking of certain lands for special improvements in their then existing works; and the company were by that and by subsequent Acts in the years 1854 and 1857 authorized to raise on bond or debenture stock £1,000,000 for special improvements and for their "general purposes." The amount of this bond debt, as it existed on the 31st of December, 1872, is here set forth:—

Bonds at 4½ per cent.	£71,365
,, 4¼ ,,	3,000
,, 4 ,,	444,793
	£519,158
Debenture stock at the same period, at 4 per cent.	512,295
	£1,031,453

By the "New River Company's Act, 1866," the company were enabled to create a new description of shares, declared to be personal estate, to the amount of £500,000, for their general purposes. The amount of these new shares, as existing on the 31st of December, 1872, is here set forth:—

442 fully paid (£100)	£44,200
4443 on call (£30)	133,290
	£177,490

The dividend on these new shares is to be *pari passu* with that paid to the proprietors of the original shares of the company.

Details of Expenditure and Revenue.

Companies.	Maintenance. Reservoirs.	Distribution Works.	Pumping.	Filtration.	Salaries, &c.	Thames and Lee Conservancy, &c.	Rents, Rates, Taxes, and other Charges.	Management. Directors and Auditors.	Salaries, &c.	Collectors Commission.	Other Charges.	Revenue. Water-rents.	Rents of Land, Houses, &c.
	£	£	£	£	£	£	£	£	£	£	£	£	£
Chelsea	631	2,140	8,741	1,068	3,100	1,300	4,235	892	2,245	1,740	1,887	79,121	381
Grand Junction	196	3,724	16,690	2,752	4,745	1,300	5,158	876	2,460	2,991	2,315	111,543	145
Lambeth	1,439	6,247	16,028	1,427	4,382	1,250	6,154	1,273	1,525	2,376	1,953	108,855	58
Southwark and Vauxhall	478	4,035	25,645	2,211	3,178	1,305	7,773	1,081	2,394	4,098	2,528	126,543	..
West Middlesex	468	2,521	15,433	922	5,211	1,477	7,402	2,345	2,646	3,229	2,445	130,374	578
East London	2,705	5,830	11,680	2,020	8,521	3,626	15,645	2,178	2,778	4,926	3,335	161,736	3,265
Kent	237	2,080	9,914	..	2,469	..	5,095	1,625	891	2,072	737	65,153	134
New River	7,873	25,224	14,973	2,744	6,747	2,413	33,385	5,685	7,548	9,682	3,438	308,028	10,438

Revenue Account—Expenditure and Revenue per Million Gallons.

Companies.	Maintenance. Maintenance and Repair of Reservoirs, &c.—including Cost of Labour and Materials.	Maintenance and Repair of Mains, Pipes, &c., and Works connected with Distribution including Labour and Materials.	Pumping-Engine Charges, Coals, Labour, &c.	Filtration—including Cost of Materials and Labour.	Salaries and Wages of Engineer, &c.	Management. Salaries of Secretaries and Clerks.	Collectors Commission.	Directors and Auditors.	Total Expenditure per Million Gallons Supplied, 1872.	Water-rents per Million Gallons Supplied, 1872.	Average Daily Supply, 1872.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Gallons.
Chelsea	0 4 0	0 13 7	2 15 4	0 6 9	0 19 8	0 14 3	0 11 0	0 5 8	8 17 2	25 1 1	8,651,592
Grand Junction	0 1 0	0 18 4	4 2 0	0 13 6	1 3 4	0 12 1	0 14 8	0 4 4	10 12 4	27 8 1	11,150,873
Lambeth	0 7 2	1 11 2	3 19 11	0 7 1	1 1 10	0 7 7	0 11 10	0 6 4	10 19 7	27 2 8	10,990,902
Southwark & Vauxhall	0 1 7	0 13 5	4 5 1	0 7 4	0 10 7	0 7 11	0 13 7	0 3 7	9 1 8	21 0 0	16,510,386
West Middlesex	0 2 9	0 14 8	4 9 7	0 5 4	1 10 3	0 15 4	0 18 9	0 13 7	12 16 1	37 17 1	9,435,876
East London	0 7 4	0 15 9	2 1 9	0 5 6	1 3 1	0 7 6	0 13 4	0 5 11	8 11 1	21 17 7	20,250,890
Kent	0 1 11	0 16 9	4 0 0	0 0 0	0 19 11	0 7 2	0 16 9	0 13 1	10 2 9	26 5 10	6,789,708
New River	0 17 8	2 16 8	1 13 7	0 5 7	0 15 2	0 16 11	1 1 9	0 12 9	13 8 9	34 11 7	24,405,000

CAMBRIDGE WATER-WORKS COMPANY.

The Half-Yearly Meeting was held at the Offices of the Company, in Bene't Street, on Friday last, Mr. Elliot Smith in the chair.

The following reports were presented:—

Your directors herewith transmit the statement of accounts for the past half year, which have been duly audited, and they propose a dividend on the consolidated stock and new £3 shares, and on the first call upon the new £2 shares for the half year ending Jan. 6, 1874, at the rate of £7 per cent. per annum, to be paid on the 2nd day of March next, free of income-tax.

Your directors are pleased to find that their anticipations of improvement in the company's account for the half year just past were not too sanguine. The relief from some expenses incident to the first half of the year 1873 has occurred, and the expected increase of revenue from two sources indicated in their last report has been realized, as shown in the accompanying statement of accounts.

The engineer and manager's report shows the increase in the company's business.

Your directors announce, with much regret, Dr. Geldart's resignation of his place at their board. His services to them until recently, when his state of health compelled him to withdraw, were most valuable, and will be remembered with thankfulness.

The directors retiring in the ordinary routine are the Rev. Dr. Okes and the Rev. Dr. Pulling, who are eligible for re-election.

Engineer and Manager's Report.

The manager reported that during the past half year water from the company's works had been laid on to 125 premises, including the new part of King's College and Trinity Hall, the increased rental derivable from which is £100 per annum. The total number of premises now supplied is 5964. The general condition of the company's works is satisfactory.

The CHAIRMAN, in moving the adoption of the report, attributed the ability of the directors to declare a 7 per cent. dividend to the recent rise in the water rate, to cope with the rise in the prices of labour and materials.

The report was agreed to, and the dividend, as recommended by the directors, was adopted.

The Rev. Dr. Okes and the Rev. Dr. Pulling were re-elected directors; and the proceedings closed with a vote of thanks to the chairman.

METROPOLIS GAS SUPPLY.

CHELSEA.—At the meeting of the vestry of this parish on Tuesday, Jan. 27, Dr. Barclay reported that "the mild and damp south-westerly wind which prevailed until the morning of the 21st inst., carried with it over the parish to a greater or less extent the effluvium from the gas-works, and led to very numerous complaints from the inhabitants. Five of their number have written to the vestry requesting that steps may be taken to abate the nuisance. About the facts I think there can be no question. The nuisance is very great, much greater than in former years, when the complaints were first made. The works (the Imperial Gaslight and Coke Company's premises at Sand's End, Fulham) have been very much extended, and the effluvium which at all hours of the

day and night escapes from a gas factory is very overpowering, more concentrated, and travels farther in proportion to the size of the works. In addition to this a new process for purifying the gas has recently been introduced, which is much more offensive, and requires much more frequent cleansing of the purifiers than that which was formerly in use. I am informed that this process has been introduced with the sanction, and indeed at the instance, of the gas referees, and the responsibility for poisoning the atmosphere is thus thrown upon them by the managers of the works. A letter has been already addressed to the gas referees on this subject, and I would suggest that a further communication embodying the present complaints should now be forwarded. I would further suggest that the attention of the Metropolitan Board should be further called to this subject, with reference to the opposition now offered by them to the proposed increase in price asked for by the Imperial Gas Company. Complaint of the nuisance ought also again to be forwarded to the Fulham Board of Works. In addition to this I am of opinion that the vestry, in the interests of the parish, should for themselves take action in this matter. If it should be found that any good chemist or gas engineer, who may be consulted, agrees with me in thinking that the best practicable means for obviating the nuisance are not adopted, there can be no doubt that the law may be brought to bear upon the case, either in the police court, or in the higher courts of judicature." After some discussion it was resolved to place the matter in the hands of the solicitor to take action thereon.

THE NORTHERN COAL TRADE.

(FROM OUR OWN CORRESPONDENT.)

The excitement which prevails throughout the country through the parliamentary elections which are going on has nearly knocked all trade in the North on the head for a time, and the coal trade of the Durham and Northumberland districts was completely devoid of all animation last week; in fact, it was in a dull, lifeless condition. Some few transactions occurred in the market in connexion with the gas coal trade. Business was offered at 15s. a ton, but the leading collieries held out for 16s. for best qualities, and the business which was done in contracts, though it was not large, was at 16s. for the very best sorts. Generally speaking, trade at the gas collieries is far from being in a lively condition, and foreign merchants are withholding their orders. The household trade has been just a shade better, and contract prices for the year have been upheld in the steam coal trade at from 18s. 6d. to 28s. per ton. The freight market is still dull, and the demand for sailing vessels to carry coals for coasting purposes is still very limited, with poor freights. The iron trade has been somewhat weaker; and there is no animation in the chemical trade. Manufacturers are limiting their production, and the leading makers of chemicals refuse to sell at the present prices. Cement and other materials used in building are getting lower. Some Newcastle houses were selling cement for exportation on Saturday at 11s. per cask, less 2½ per cent. The labour market is a little disturbed on the Tyne just now, as the men in the building trade and in the engine factories are agitating for an advance of wages, which they are not likely to get in the face of a falling market. Work at the pits is very steady, and the pitmen have not of late been making "broken time."

CHEMICAL, MINERAL, AND METAL REPORT,

For the Week ending Jan. 31, 1874.

(*From Messrs.* BERGER SPENCE AND CO.'S *Circular.*)

Chemicals.—The course of business during the past week has tended to confirm the improvement attained since the year began, and it is satisfactory to note that January closes with the market in a better position than when it opened, and the prospect less discouraging. The alkalies have all been in better demand this week, and are therefore more firmly held. With the exception of soda ash, which is now quoted at 2¾d., there has, however, been no actual advance in prices. Nitrate of soda received less attention than previously.

Minerals.—In the mineral market the demand has been inactive. The supply of coal continues to increase satisfactorily, and, judging from the manner in which concessions are made privately, it may be inferred that reduced prices will soon be publicly quoted. There have been larger arrivals of iron ore from abroad this week. Lead ore remains at about as formerly quoted, £14 to £14 10s. being still the average price for good galena. Tin ore remains depressed. At Swansea copper ore sale, on the 27th, the average price was 15s. 2¼d. per unit for 18 per cent. produce.

Metals.—There is little doing in this market. Scotch pig iron warrants that at the commencement of the week were dull, have towards the close showed some signs of animation, and considerable amounts have changed hands. A large import of Cleveland-made pig iron is now being sent into Scotland, where it is found to work usefully as an adjunct with the home-made product. Middlesborough pig iron is without change, but second-hand lots are offered at prices under those which would be considered remunerative by the smelters. There is a slight increase in the demand for manufactured iron in South Staffordshire, but there is still plenty of room for improvement in this branch. A decline has taken place in the value of copper, and some large sales have been made at the reduction. The charters from the West Coast for the fortnight ending Jan. 2 are cabled as 2200 tons. There is little doing in tin. At the sale in Holland on the 29th, Banca averaged equal to £120 10s. to £121. Lead is irregular, and quotations just now are quite nominal. It is reported that the stock (3700 tons) lately held under advances to the firms which are now being liquidated has all been sold, but the price and terms have been kept private by the parties interested. Spelter is easier with a limited business.

Register of New Patents.

1597.—WRIGHT, W., Sheffield, "*Improvements in the manufacture of gas for heating and illuminating purposes and in apparatus for the same.*" Patent dated May 3, 1873.

This invention consists in the combination of apparatus by means of which steam is converted into inflammable gas by passing it through a series of stationary pistons or discs of cotton or other fibrous material saturated with benzoline or other spirit or oil. These pistons or discs are fixed in a cylinder or vessel surrounded by an outer casing, with a steam space between the two, in order to maintain the heat within at the required temperature, and prevent condensation. In the cylinder are two horizontal partitions dividing the vessel into three compartments, the upper compartment containing benzoline or other spirit or oil to be distributed through the series of pistons or discs in the compartment below it, through small perforations in a set of pipes inserted in the upper partition. In this compartment there is also a set of pipes open at both ends extending to near the top of the compartment through which the steam gas passes without interfering with the spirit or oil. In the middle compartment are fixed the series of pistons or discs into and through which the spirit or oil is distributed as it issues from the perforations at the bottoms of the said pipes. In the lower partition there is another set of pipes open at both ends, through which the steam admitted into the bottom compartment passes up into the middle compartment. Above the cylinder and case is fitted an air-tight reservoir for containing spirit or oil, into the top of which a pipe leading from the outer case admits steam to press on the surface of the spirit or oil, and cause it to pass through a pipe in the bottom of the reservoir leading into the top of the upper compartment. Another pipe leads from the bottom of the middle compartment into the upper part of the reservoir, by means of which the unconsumed spirit or oil is forced back into the reservoir. Another pipe serves to discharge the condensed fluid at the bottom of the middle compartment. There is also a pipe for discharging waste fluid from the bottom compartment, and another for discharging the condensed water in the outer case. The steam to be converted into inflammable gas is admitted to the bottom compartment through a pipe in the outer case, and another with a valve in it leading into the compartment. In the top of the upper compartment is a pipe with a valve in it for the steam gas to pass out of the apparatus to be consumed as required. In the top of the spirit reservoir is a pipe for the escape of air when the reservoir has to be recharged. All these pipes are furnished with taps or valves. Steam may also be mixed with gas at the end of any burner or blow-pipe, and made inflammable by passing through the gas.

1637.—DE CASTRO, D., Mortlake, Surrey, and BURTON, R., Camden Town Middlesex, "*Improvements in gas-meters.*" Patent dated May 6, 1873.

This invention relates to that form of gas-meter known as the "wet" gas-meter, in which the true measurement of the quantity of gas passing through it depends upon the accurate adjustment of the level of the water which the measuring chamber contains, and consists of improvements in the method of constructing and arranging the parts of the apparatus by which the height or level of the water in the measuring chamber is automatically adjusted, by which improvements the sensitiveness and accurate registration of the meter is increased, much greater simplicity and cheapness of construction are attained than in wet gas-meters as heretofore constructed and used, whilst the accuracy of the measurement and indication is less affected by the meter not being placed in a perfectly level position.

In order to effect an accurate automatic adjustment of the height or level of the water in the measuring chamber of the meter, within the square front of the meter (which serves as a reservoir for the supply of water, in the method well understood and practised in the construction of wet gas-meters) a tube is fixed vertically or nearly so, and of any suitable dimensions and shape, but preferably semicircular in plan. The upper end of this tube is made open, and arranged so as to rise nearly to the top of the square front or reservoir. The lower end is closed, and provided with an opening from the drum-case into the tube (preferably by forming the flat side of the tube, in plan, of the plate which separates the drum-case from the square front or reservoir, and making the opening in this plate), and the upper edge of the opening is adjusted so that it is level with or very slightly below the height or level at which the water should stand in the drum case when the meter is measuring and indicating accurately.

A suitable passage or opening is also made between the drum-case and the lower part of the square front or reservoir (the upper part of which is made air-tight), so that when the level of the water in the drum-case falls, from evaporation or any other cause, a bubble of gas passes from the drum-case under the upper edge of the opening first described into the tube, up which it passes into the square front or reservoir, and by displacement allows a corresponding quantity of water to pass into the drum-case from the square front or reservoir through the opening last described. If, on the other hand, the height or level of the water in the drum-case becomes too high, from the accidental admission of too much water or any other cause, such surplus water escapes through a bent tube, the inner open end of which is turned up within the drum-case or drum to the exact height or level at which the water should stand when the meter is measuring and indicating correctly, and the outer end of the tube is brought through the plate separating the drum-case from the square front or reservoir, and is then turned down through the bottom of the latter, and brought nearly to the bottom of the waste water box, which may be of the kind ordinarily constructed and used. In order to accurately adjust the height of the tube last described, it is arranged so that it can be moved a sufficient distance vertically, and when its proper height has been exactly determined by experiment, is screwed, soldered, or otherwise fixed to the plate between the drum-case and the square front or reservoir, and also to the bottom of the latter where it passes through it.

The pipe through which the supply of gas passes to the measuring chamber or drum from the upper part of the waste water box (into which it is admitted from the inlet-pipe, as is usual in such wet gas-meters as ordinarily constructed and used), may be of the same shape and parallel to the waste water pipe already described, and both pipes may be fixed together so as to pass through the same aperture into the measuring chamber or drum.

Instead of the arrangement just described, the gas inlet-pipe is sometimes made and arranged separately from the waste water pipe, and fixed in any other convenient part of the reservoir sufficiently near to the centre of the drum as to communicate between the upper part of the waste water cistern and the interior of the drum or measuring chamber (above the water level), as in the arrangement first described.

Sometimes, instead of the arrangements described, the bottom of the square front or water reservoir is made as high as possible, so that only sufficient room is allowed above it for the rotation of the worm, screw, or other mechanism, which drives the registering apparatus of the meter in the method well understood and practised; and the adjustable tube already described (by which the gas is admitted from the upper part of the waste water chamber to the interior of the drum) is made to pass directly into the drum-case and drum from the upper part of the waste water chamber below the bottom of the square front or water reservoir, without passing through the latter, and it is then turned up (being curved so as to pass the axis of the drum or rotating measuring chamber), so that its open end is above the level of the water in the drum.

The adjustable overflow-pipe used as and for the purposes already described may also pass through the same aperture from the waste water chamber into the drum, or through another separate aperture sufficiently near the centre of the drum, its lower end being brought down (if desired) nearly to the bottom of the waste water box, without passing through the bottom of the square front or water reservoir, and by this arrangement the necessity for making any hole in the latter is avoided.

By the different arrangements described, if the level of the water in the drum-case and measuring-chamber be too low, gas passes from the drum-case up the tube first described into the upper part of the square front or water reservoir, and by displacement allows a corresponding quantity of water to enter the drum-case from the reservoir, and if its level becomes (on the other hand) too high, the surplus water escapes through the bent and adjustable pipe into the waste water box.

It is not necessary in the arrangements described to fit a gas-tight stopper to the pipe by which water is supplied, when necessary, to the square front or reservoir (which pipe descends nearly to the bottom of such reservoir), but a loosed or hinged cover may be fitted to it, if desired, since the water cannot be blown out of it by any pressure of gas, which only has the effect of increasing the depth of the water "seal" in the tube first described.

1678.—RONALD B., and FARMER, J., Glasgow, "*Improvements in water-closets, parts of which are applicable to other water-cisterns.*" Patent dated May 9, 1873.

This invention consists in improvements on patent No. 89, Jan. 11, 1872, for regulating the quantity of water to be used at each action or flushing of water-closets and other cisterns by the addition of a second float to the ordinary float-lever of the inlet supply-valve; this new float working in a separate

vessel of its own, so as to be raised and act by water at a little higher level than the ordinary float, and supplied with its own water by a branch pipe from the one supplying the pan, so as to nearly close the inlet-valve as soon as the water rises to the higher level in the small chamber of the new float; but when the plug of the closet is let down, a small hole or duct in the lower part of the new float-chamber lets the water slowly out of it into the closet or ordinary float-chamber, and opens the inlet-valve to fill the closet to its normal level, when the ordinary float raises the lever and shuts the intlet valve, all otherwise as usual ready for use and ufshing again. In some cases the small outlet duct from the lower part of the new float-chamber might be made elastic, and so attached to the handle or plug, that when they were lifted it would be closed, so as only to flush the closet for the short time it was in filling. The size of this vessel and the branches leading to it, and the basin, would thus mainly regulate the quantity of water used each time to flush the closet.

Another improvement consists in placing the supply-valve and its duplex float-lever within a duplex chambered flushing-cistern, the new chamber, connected by a small hole below, to the normal low acting level chamber, made to contain the quantity of water required to flush the basin placed at a convenient height above it for that purpose, connected by a pipe and cock or valve, opened and shut respectively, by a lever and wire, by the raising and lowering of the handle of the plug; the inlet valve would admit the water to the new float chamber, which when filled to the high level would shut it, and when the plug was let down and the lower outlet-valve closed, the two chambers of the upper cistern would fill to the normal lower level by the small hole, when the ordinary float would finally close the inlet valve and leave the whole ready for the next use and flushing of the closet.

Another improvement consists in effecting the flushing of the closet with the contents of one water chamber and single float lever and inlet valve in the upper cistern, discharged either by a moveable syphon into the pipe leading to the basin, or a stationary syphon with a closing valve on that pipe; in each case respectively the action of lifting the plug handle would lower the syphon, or open the valve on the pipe and let the contents down to flush the closet, and by a forked branch fill a side pocket, which, when the plug was let down, would fill the basin to its usual level; the moving syphon working in a dry chamber or pocket over the pipe leading to the closet; as the water rose in the cistern to its normal level it would raise the float-lever and shut the inlet-valve.

Another improvement consists in making the interior of the plug a hollow flushing cylinder, so that when lifted the water in it would be forced up through a branch in the stationary cover into the basin, the weight of the plug and water in it being partially counterbalanced by an automatic working weighted lever connected to it, the overflow would be effected through an annular space or trap duct in the outer case of the plug; while the plug-valve seatings and form of the float chamber and iron case of the closet would preferably be substantially as in the former patent.

1681.—RICHARDS, W., Brixton, Surrey, "*Improvements in the manufacture of pipes for conveying water, gas, air, sewage, and drainage.*" Provisional protection only obtained. Dated May 9, 1873.

This invention consists in the formation of pipes from sheet-iron or zinc, and attaching thereto, by riveting or soldering, ferrules of cast or malleable iron made of the spigot or faucet form, turned and bored, or otherwise made conical, so that when they are smeared with white lead, and forced the one into the other, a sound joint may be obtained. The pipes may then be coated with vitreous glaze, gutta percha, or japan. When the pipes are made of zinc, it is preferred to make the ferrules of an alloy of tin, lead, and antimony, and attach them to the pipe by solder. The pipes so made are then covered with a thick layer of papier-maché, or a mixture of pitch with any fibrous material, or pitch mixed with saw or cork dust, road dust, or breeze. Those of glazed iron, however, may be enveloped in Roman or Portland cement. To make wrought-iron service-pipe more durable, it is proposed to cover them with paper passed through hot pitch, or the pipes may be joined internally and externally, and afterwards heated.

APPLICATIONS FOR LETTERS PATENT.

301.—HACHE, E. H., Paris, "An improved mechanical apparatus for indicating by clockwork the excessive pressure of lighting gas." A communication. Jan. 23, 1874.

317.—LUCAS, E. F. R., Redcar, Yorks, "Improvements in the manufacture of anthracine." Jan. 24, 1874.

322.—CLARK, A. M., Chancery Lane, London, "An improved process for eliminating the soluble principles contained in gases and vapours." A communication. Jan. 24, 1874.

327.—BUDENBERG, A., Manchester, "Improvements in injectors for raising and forcing fluids." A communication. Jan. 26, 1874.

342.—LAKE, W. R., Southampton Buildings, London, "An improved apparatus for maintaining a constant level of water in wet gas-meters, and for separating from vapour liquid held in suspension in the same." A communication. Jan. 27, 1874.

347.—TANDY, G. G., Penge, and DRYDEN, J. A., Battersea, "Improvements in lamps." Jan. 27, 1874.

348.—WHITTINGHAM, J., Great St. Helen's, London, "Improved apparatus for manufacturing gas for illumination." A communication. Jan. 27, 1874.

353.—CHARLES, P., Stoke Newington, "Improvements in apparatus for controlling the supply of water and preventing waste." Jan. 28, 1874.

GRANTS OF PROVISIONAL PROTECTION.

77.—FOTTRELL, J., Dublin, "Improvements in artificial stone pipes and tubes, and in the coating or lining thereof, to render them suitable for the conduit of alkaline liquids and acid products from chemical, manure, and gas works, for sewage, saline liquids, and gas." Jan. 7, 1874.

153.—FOULIS, W., Glasgow, "New or improved machinery or apparatus for charging retorts." Jan. 12, 1874.

160.—SCHMERSAHL, A. E., Manchester, "Improvements in treating sewage water and other foul liquids." Jan. 12, 1874.

167.—HEARSON, C. E., Bedford Row, Middlesex, "Improvements in Argand burners for burning coal gas or other illuminating gas." Jan. 13, 1874.

205.—NEWTON, A. V., Chancery Lane, London, "Improvements in the mode of and apparatus for filtering, rectifying, or clarifying liquids and gases." A communication. Jan. 15, 1874.

219.—GRIFFIN, J. T., Upper Thames Street, London, "Improvements in the construction of wrenches for turning pipes, bars, and other similar articles." A communication. Jan. 16, 1874.

226.—LAMONT, J., Glasgow, "Improvements in water-closets and service-cisterns." Jan. 17, 1874.

232.—FORBES, Rev. G. H., Broughton Rectory, Northampton, "Improvements in the purification of gas." Jan. 17, 1874.

239.—BROADFOOT, J., Glasgow, "Improvements in pumps." Jan. 19, 1874.

242.—GEDGE, W. E., Wellington Street, Strand, London, "Improvements in gas-burners with lateral covered jets." A communication. Jan. 19, 1874.

246.—VAUGHAN, E. P. H., Chancery Lane, London, "Improvements in apparatus for generating inflammable gas by the carburization of atmospheric air." A communication. Jan. 19, 1874.

251.—ABRAHAMS, A., St. Peter's Park, Middlesex, "Improvements applicable to gas and other lamps." Jan. 20, 1874.

261.—LAKE, W. R., Southampton Buildings, London, "Improvements in lamps." A communication. Jan. 21, 1874.

277.—TYLOR, A., and TYLOR, J. J., Newgate Street, London, "Improvements in apparatus and arrangements for containing, measuring, controlling, regulating, and arresting the supply of liquids and fluids, and preventing waste." Jan. 22, 1874.

283.—SCOTT, H. Y. D., Ealing, Middlesex, and SPENCE, J. B., Manchester, "Improvements in the treatment of sewage and ammoniacal liquids." Jan. 22, 1874.

NOTICES TO PROCEED.

3077.—MARTIN, J. W., Liverpool, "An improved tube expander and stopper." Sept. 19, 1873.

3086.—FOTTRELL, J., Dublin, "An improved composition for the manufacture of pipes and tubes suitable for water at high pressure, and as conduits for sewage purposes, gas," &c. Sept. 20, 1873.

3186.—BURT, G., Birmingham, "Improvements in lamps." Oct. 1, 1873.

3554.—SWEET, A., Hampstead Road, London, "Improved mechanical arrangements for water supply purposes, whereby waste is prevented, regulation effected, and 'tremor' avoided." Nov. 1, 1873.

203.—HOOKER, W. D., San Francisco, California, "Improvements in direct-acting steam-engines, also including improvements in pumps." Jan. 15, 1874.

207.—HUERNE, P., San Francisco, California, "An improved self-cleaning water-filter and connexions, whereby water may be filtered for household purposes and stored in quantity so as to be used at pleasure." Jan. 16, 1874.

PATENT WHICH HAS PASSED THE GREAT SEAL.

2734.—FORSTER, J. R., Newcastle-upon-Tyne, "An improved elastic spigot and socket pipe-joint for gas, water, steam, and liquids." Aug. 18, 1873.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £50 BEFORE THE EXPIRATION OF THE THIRD YEAR.

90.—DARWIN, S. B., "Improvements in apparatus used in the manufacture of gas." Jan. 13, 1871.

113.—ALLAN, J. F., "Improvements in making illuminating gas, and in apparatus therefor." Jan. 16, 1871.

143.—BROTHERHOOD, P., and KITTOE, G. D., "Improvements in apparatus for regulating and measuring the flow of liquids." Jan. 20, 1871.

164.—RIDER, A. K., "Improvements in gas-engines." Jan. 21, 1871.

184.—NEWTON, W. E., "Improvements in meters for measuring liquids." Jan. 24, 1871.

PARTICK, HILLHEAD, AND MARYHILL GAS-WORKS.—The second annual festival of the *employés* took place on Wednesday evening, the 21st of January, in the Burgh Hall, Hillhead. In the unavoidable absence of Bailie Cowan (chairman of the company), ex-Provost Hunter ably discharged the duties of the chair, and was supported on the platform by the Rev. T. M. Laurie, Dowanhill; Provost Thomson, Partick; Provost Bruce, Hillhead; Provost Shaw, Maryhill; Jas. Hislop, Esq., the company's engineer, and other influential gentlemen connected with the burghs. After an excellent tea, purveyed by Robert Dunlop, Partick, the chairman, in a neat speech, expressed the pleasure he felt in meeting so many of the *employés* with their wives, sweethearts, and families, and felt certain, from the varied programme of the evening's entertainment, that they would all enjoy themselves. He urged the men to be ever attentive to their duties, and thereby reduce complaints from every source to the lowest possible number. The Rev. T. M. Laurie spoke of the first attempt made to light up the streets of London with oil lamps, as a step in the right direction, for now we have (after repeated improvements) gas companies doing great mission work. They light up the dark streets and lanes of our cities, and thereby are the means of preventing innumerable crimes. The various pieces of vocal and instrumental music given throughout the evening were loudly applauded. Votes of thanks were awarded, and after the company had sung "Auld Lang Syne," the floor was cleared, and dancing kept up until an early hour.

Share List of Metropolitan Gas Companies.

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Latest Quotations.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s. d.	£ s. d.	£	s. d.	s. d.	s. d.	Cndls.
180000	10	Chartered A ord.	10 0 0	10 0 0	14½				
25000	10	Do. A 5 p. c. Pref.	10 0 0	5 0 0	15½	3 9	4 4	0 7	17½
20000	10	Do. 2 do.	10 0 0	5 0 0	13	Can-	Can-	Can-	Can-
30000	10	Do. 3 do.	10 0 0	5 0 0	11¾	nel	nel	nel	nel
10000	10	Do. B 4 p. c. max.	10 0 0	4 4 0	7½	4 8	4 5	0 10	23
20000	10	Do. C 10 p.c. pref.	10 0 0	10 0 0	19½				
12000	25	Do. D do. do.	25 0 0	10 0 0	48				
448875	8k.	*Commercial*	100 0 0	10 0 0	156—158	4 6	4 0	Nil.	16
5000	10	*Crystal Palace District*	10 0 0	10 0 0	15½—16½	6 0	4/ & 4/2	Nil.	14·99
5000	10	Do. preference.	10 0 0	6 0 0	12½—13½				
10000	10	Do. new shares	10 0 0	7 0 0	11—12½				
15600007	8k.	*Imperial*	100 0 0	10 0 0	157—159				
78000	12½	Do.	12 10 0	7 0 0	15—15½	3 9	3 9		15½
26000	12½	Do.	5 0 0	7 0 0	6¼—6¾				
3000	40	*Independent* A	40 0 0	10 0 0	64	4 6	3 6	0 4	
3000	10	Do. B	10 0 0	5 0 0	9				
3000	20	Do. C	20 0 0	7 10 0	25				
4500	10	Do. D	3 0 0	10 0 0	6				
378350	8k.	*London*	100 0 0	10 0 0	154				
150000	do.	Do. 1st. pref.	100 0 0	6 0 0		5 6	4 6	0 9	15¼
14450	do.	Do. 2nd pref.	100 0 0	6 0 0		Can-	Can-	Can-	Can-
4350	do.	Do. 3rd pref.	100 0 0	6 0 0		nel	nel	nel	nel
7622	25	Do. A shares	12 10 0	6 0 0		7 6	6 0	1 0	23
26805/	all	Do. Debent. Stck.	100 0 0	5/. & 6/.					
27000	20	*Phœnix*	20 0 0	10 0 0	35	5 0	4 6	0 9	15·60
3600007	100	Do. new	55 0 0	7 10 0	70				
1440007	8k.	Do.	100 0 0	5 0 0	90				
5000	20	*Ratcliff*	20 0 0	10 0 0	30—32	5 6	3 9	Nil.	12
4000	50	*South Metropolitan*	50 0 0	10 0 0	85	3 6	3 0	Nil.	16
4000	12½	Do.	12 10 0	10 0 0	21¼				
20000	12½	Do. new shares	5 0 0	10 0 0	10				
15000	10	*Surrey Consumers*	10 0 0	10 0 0	15¼—16				
10000	10	Do. new.	7 0 0	10 0 0	4¼—4¾	5 6	4 0	0 3	
		Tottenham and Edmonton							
1500	10	*Wandsworth and Putney*	10 0 0	10 0 0	14—15	4 6	4 6	0 3	14
1500	10	Do.	10 0 0	7 10 0	11—12				
2957	10	Do.	10 0 0	7 0 0					
993	10	Do.	3 0 0	7 0 0					
16000	5	*West Ham*	5 0 0	10 0 0	7¾—8¼				
10000	5	Do. new shares	1 10 0	10 0 0	3–3¼ pm.				

Share List of Provincial Gas Companies.

(Directors and Managers of Gas-Works are earnestly requested to enable us to rectify any errors and fill up the omissions in the following List.)

*The Companies whose names are printed in italic type are incorporated by Act of Parliament. The Companies to which a * is affixed have obtained a provisional order during the last three years.*

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£	**ENGLAND.**	£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
	10	*Aberdare & Aberaman*				4 0	4 0	Nil.	14
		Aberdovey							
400	5	Abergele (Lim.)	5 0 0	4 0 0	5 0 0				
		Abertillery G. & W.							
400	10	Abersychan (Lim.)	2 10 0	10 0 0			6 0		14
400	10	*Do.,		7 0 0					
		Aberystwith							
800	12½	Abingdon	12 10 0	8 0 0	16 0 0		6 8	1 8	16
1050	10	*Accrington G. & W.*	10 0 0	& Bns.	15 0 0		5 0	0 6	
1050	10	Do., new shares	10 0 0		15 0 0				
2100	5	Do., do.	5 0 0		7 10 0				
2100	5	Do., do.	1 0 0		1 10 0				
2100	2½	Do., do.	0 10 0		0 15 0				
15120*l.*	5	*Airedale* (Limited)	5 0 0	10 0	10—10½	4 6	4 6	Nil.	14
1176*l.*	5	Do.	1 0 0	10 0	3 5 0				
24	75	Alcester	75 0 0		100 0 0		6 8	0 8	
128	10	Aldborough (Lim.)	10 0 0	5 0 0					
269	10	Alderney	10 0 0	5 0 0	11 0 0				
2500	10	*Aldershot G. & W.*	7 10 0	7 0 0	10—10½				
	2	Aldridge (Limited)							
850	5	Alford (Limited)	5 0 0		5 10 0		6 8	Nil.	16
300	9	Alfreton	9 0 0	10 0 0	9 0 0		5 3	0 5	14
50	100	Alnwick	103 0 0	8 0 0	130 0 0		5 0	1 0	19
		Alston Moor							
250	10	Alton	10 0 0	10 0 0	12 10 0		7 6	0 10	12
4000	10	*Altrincham*	7 10 0	10 0 0	14 15 0	4 6	4 6	Nil.	22
		Ambleside District							
		Amersham [£8000							
		Amlwich (Limited)							
170	10	Ampthill	10 0 0	7 0 0	13—13½				
600	10	Andover	10 0 0	7 0 0	13 14 0		7 6	1 6	14
		Annfield Plain (Lim.)							
358	5	Appleby	5 0 0	2 10 0	2 15 0				
	5	Arlesey (Limited)							
260	10½	Arundel	10 10 0	7 10 0					
250	10	Ashbourne, Derby	10 0 0	6 0 0	13 10 0		5 10	1 3	
292	5	Ashburton	5 0 0	5 0 0					
84	30	Ashby-de-la-Zouch	30 0 0	6 0 0					
		Ashford & Bedfont (L.)							
700	10	Ashford (L.), Kent	10 0 0	6 0 0	11 10 0				
1600	30	*Ashton-und-Lyne*	30 0 0	10 0 0	60 0 0				
		Aspatria							
600	5	Atherstone	5 0 0	7 10 0			6 8	0 5	
		Attleborough					7 6	0 10	15
		Axbridge (Limited)							
		Axminster							
1200	12	Aylesbury	10 0 0	7 10 0	14 0 0		5 5	0 5	15
150	10	Aylsham (L.), Norfk	10 0 0	5 0 0	14 0 0		7 6	1 8	
3093	10	*Bacup (Rossendale Union)* ordinary	10 0 0	10 0 0	16 0 0				
600	10	Do., preference	10 0 0	10 0 0	16 0 0				
2597	10	Do., new issue	6 0 0	10 0 0	11 0 0				
1503	10	Do., 2nd new issue	8 0 0	7 0 0	10 0 0				
300	5	Bakewell	5 0 0	10 0 0	9 15 0		6 0	1 0	15
200	10	Baldock	10 0 0	7 10 0					
1000	10	*Banbury*	10 0 0	10 0 0	18 0 0	4 6	4 6	Nil.	16½
500	10	Do., new shares	10 0 0	7 0 0	12 10 0				
2650	10	*Bangor Gas & Water*	10 0 0	8 0 0	15 0 0	6 0	6 0	Nil.	15½
		Barking							
		Barmouth (L) £1500							
280	10	Barnard Castle	10 0 0	5 10 0	10 15 0				
5000	10	*Barnet District Gas & Water*	10 0 0	6 0 0	11 10 0				
1000	5	Do.	5 0 0	5 0 0	5 10 0				
	10	Do.	5 0 0	5 0 0	10 0 0				
40000	Sk.	*Barnsley*		10 0 0	202 0 0	4 0	4 0	0 3	16—18
10000	10	Do.		6 0 0	12 10 0				
20000	10	Do.		7 0 0	13 0 0				
1600	10	Barnstaple	10 0 0	3 0 0	10 0 0	4 3	4 3	Nil.	14
1158	2	Barton-on-Humber	2 0 0	5 0 0	2 0 0				
120	25	Basingstoke	25 0 0	8 0 0	35 0 0				
120	10	Do.	10 0 0	8 0 0	14 0 0				
		Baslow (Derby)							
2500	16	*Bath*, A shares	16 0 0	8 0 0					
2500	8	Do., B shares	8 0 0	7 0 0	40 0 0	3 9	2 10	Nil.	14
2500	10	Do., C shares	10 0 0	7 0 0	16 7 6				
5000	10	Do., D shares	8 0 0	7 0 0	13 5 0				
		Battle £2000		6 0 0					
68	25	Bawtry	25 0 0	4 15 0	18—22		8 4	0 3	17
300	5	Beaconsfield (L.)	5 0 0	4 10 0	5 0 0				
	3	Beaminster (Limited)							
710	10	*Beccles Gas & Water*	10 0 0	5 0 0	7 0 0	6 0	6 0	0 6	
		Bedale, Yorkshire							
300	30	*Bedford*	25 0 0	4 0 0	20 0 0				
390	10	Bedworth	10 0 0	5 0 0	10 0 0				
300	3	Belford	3 0 0	Nil.	1 10 0		12 6	2 6	
400	10	Belper	10 0 0	10 0 0	20 0 0		5 6	0 6	16
400	3	Do.	3 0 0	5 0 0					
	10	Bentham (Limited)							
		Berkhampstead							
1086	10	Berwick & Tweedmouth	10 0 0	7 0 0	15 0 0		8 4	2 6	27—30
376	10	Bewdley	10 0 0	5 0 0	10 0 0		5 10	0 10	16
200	10	Bicester	10 0 0	5 10 0	11 0 0				
800	10	Biddulph, Bradley G., & Black Bull	5 0 0	5 0 0	5 0 0				
500	10	Bideford	10 0 0	6 0 0	10 10 0		5 6	1 0	
90	10	Do.	5 0 0						
		Biggleswade							
200	10	Billingborough and Horbling	10 0 0	8 10 0	12 10 0				
6000	5	*Bilston*	5 0 0	8 0 0	6 10 0	6 0	3 4	0 3	15
200	10	Bingham	10 0 0	4 0 0					
		Birchington (Lim.)							
		*Birkdale (Limited)				4 6			
1200	80	*Birmingham*, A sh.	80 0 0	5 0 0	111 0 0	4 6	3/—3/6	9-11d.	15—16
400	8	Do., B shares	8 0 0	5 0 0	11 0 0				
5020	40	Do., new shares	40 0 0	5 0 0	45 0 0				
2400	50	*Birmingham & Staffordshire*	50 0 0	10 0 0	101 10 0	4 6	3/—3/6	0 9	15—16
2400	25	Do., new shares	25 0 0	10 0 0	50 15 0				
7020	20	Do., do.	20 0 0	10 0 0	40 15 0				
12300	28	Do., do.	20 0 0	7 10 0	36 0 0				

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
		Bishop Auckland							
180	10	Bishop's Castle	10 0 0	5 0 0	10 0 0				
230	10	Bishop's Stortford	10 0 0	5 0 0	10 0 0				
		Bishop's Waltham (L.)							
6000	15	*Blackburn*, A shares	15 0 0	10 0 0	29 10 0				
6000	15	Do., B shares	14 0 0	7 10 0	19 0 0				
772	5	Blaenavon (Limited), (£4000)	5 0 0	7 10 0	6 0 0				
1157	5	*Blaenavon Gas and Water	5 0 0	5 0 0	5 10 0	5 0	5 0	Nil.	14
348	5	Do.	3 0 0						
		Blandford							
		Blancan Festiniog (L.)							
		Blyth & Cowpen							
		Bodmin							
1000	5	Bodmin Consumers	4 6 0	6 0 0	5 0 0		6 6	Nil.	13—14
844	5	*Bognor	5 0 0	5 0 0					
844	5	Do.	2 10 0		2 10 0	5 10	5 10		14·60
100	10	Bolsover	10 0 0		10 0 0				
		Boroughbridge (L.)							
2000	10	*Boston*	10 0 0	8 10 0	18 0 0	5 6	5 0	1 0	15·50
1550	10	Do.	10 0 0	7 10 0	14 0 0				
	5	Boston Spa (Lim.)	5 0 0	6 10 0	5 10 0				
		Botesdale (Limited), Suffolk							
	5	Bottesford (L) £1500							
200	5	Boughton Blean	5 0 0	5 0 0	5 0 0				
193	10	Bourn	10 0 0	5 0 0					
		Bournemouth Gas and Water							
550	10	Box Moor, Two Waters and Crouchfield (Limited)	10 0 0	5 0 0	10 0 0		5 5	0 5	16
160	10	Brackley	10 0 0	6 0 0	10 0 0				
		Bracknell (Lim.)							
		Bradford, Wilts							
		Bradley (Limited)							
		Braintree							
	67	Bramham Consumers (Limited)							
		Brampton, Cumberland							
		Brandon, Suffolk							
600	10	*Brecon*	10 0 0	10 0 0	20 0 0	5 0	5 0	0 5	14
129700	Sk.	*Brentford*	All.	8 0 0	120—115				
5000	20	Do., A shares	13 0 0	8 0 0	15 0 0				
2500	20	Do., preference	20 0 0	5 0 0	20 0 0				
		Brentwood							
		Bridge, nr Canterbury							
1100	10	*Bridge-end Gas and Water*	10 0 0	3 0 0	10 0 0	5 0	5 0	Nil.	14½
1400	5	Bridgenorth (L.)	5 0 0	10 0 0	10½—10½		5 0	1 0	15
200	60	*Bridgwater*	60 0 0	7 10 0	80 0 0		4/3—5/	1 0	14
1386	10	Bridlington (L)	10 0 0	Nil.	14 0 0		6 3	1 0	
520	10	Do.	2 10 0	10 0 0	7 10 0				
450	10	Bridport	10 0 0	5 0 0	13 0 0		5 0	0 5	14
450	10	Do., new shares	7 0 0	5 0 0	9 0 0				
6000	5	*Brierly Hill*	5 0 0	4 0 0	10½—11				
		Brigg							
		Brightlingsea (L.)							
3375	20	*Brighton*	20 0 0	10 0 0	32—33				
675	20	Do., new shares	4 0 0	7 0 0	8½—9½				
5000	20	*Brighton & Hove*	20 0 0	5 0 0	22—23	4 0	4 0	0 6	14½
1250	20	Do., new shares	20 0 0	5 0 0	22—23				
2500	20	Do.	20 0 0	5 0 0	22—23				
		Brimscombe (L.)							
251250	Sk.	*Bristol United*	Stock.	10 0 0	179—181	4 6	4 0	0 6	16
10000	20	British (Limited)	20 0 0	10 0 0	33—35				
150	8	Brixham	8 0 0	5 0 0					
		Broadstairs							
2000	10	*Bromley*, Kent	10 0 0	10 0 0	15 10 0	6 0	5 0	0 5	14
3000	10	Do., new shares	7 0 0	10 0 0	10 0 0				
7000	1	Bromsgrove	1 0 0	5 0 0	1 2 0			0 8	
100	10	Bromyard (Lim.)	10 0 0	7 10 0	10 0 0		9 0	Nil.	
		Broughton							
120	10	Bruton	10 0 0	4 0 0	8—9				
		Brymbo							
		Brynmawr							
100	25	Buckingham	25 0 0	6 0 0	26 0 0				
		Buckpool (Limited)							
		*Bungay				5 0			
		Buntingford (Lim.)							
	5	Burgess Hill & St. John's (L.) £5000							
500	1	Burley-in-Wharfdale (Limited)	1 0 0	5 0 0	1 1 0				
		Burnham, Bucks							
		Burnham (L.) Essex							
		Burnham, Somers.							
1600	5	*Burslem & Tunstall*	5 0 0	10 0 0	9 5 0	3 6	3/4—3/6	0 4	13
3000	5	Do., new shares	5 0 0	7 10 0	7 2 6				
2600	5	Do., do.	5 0 0	7 0 0	6 12 6				
440	2½	Burton, Westmoreland (Limited)	2 10 0						
1200	10	*Bury St. Edmund's*	10 0 0	10 0 0	19 10 0	6 8	5 10	0 10	14
1800	10	Do., new shares	5 0 0	7 10 0	6 10 0				
500	5	Caerleon (Lim.)	4 0 0						
400	5	Caerphilly Gas & Water (Limited)	5 0 0	5 0 0	5 0 0		6 6	0 6	
150	10	Caistor	10 0 0	7 0 0	12 0 0				
187	5	Callington	5 0 0		5 0 0				
300	10	Calne, Wilts	10 0 0	8 0 0	14 0 0		6 3	0 10	
		Calverley (L.) *York.*							
37440	Sk.	*Cambridge*	100 0 0	10 0 0	150 0 0	4 0	4 0	Nil.	15
1872	10	Do., new shares	5 0 0	4 0 0	7 0 0				
		Campden							
300	50	Cansfield	50 0 0	10 0 0	92 0 0				
22500	Sk.	*Canterbury Gas and Water*	50 0 0						
4000	10	Do.	10 0 0	6 0 0	10 10 0	4 6	4 6	0 6	14½
850	25	*Cardiff*, A shares	25 0 0	10 0 0	50 0 0	4 0	4 0	0 6	14½
1600	25	Do., B shares	25 0 0	8 0 0	40 0 0				
543	25	Do.	20 0 0	7 0 0	30 0 0				
1400	2	Cardigan (Limited)	2 0 0	5 0 0	2 0 0	10 0	8 4	0 10	14

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
• 320	25	Carmarthen	25 0 0	Nil.	18 15 0	4 6	4 6	Nil.	14
•	10	*Carmarthen* (Lim.)							
•	5	Carnforth (Limited)							
•		Carshalton [£10000.							
• 200	6	Castlecary	6 0 0		5 0 0				
• 200	10	Castle Donnington	10 0 0	6 0 0	12 14 0				
• 249	5	Castleford	5 0 0	5 0 0	5 0 0				
• 400	5	Castletown, I. of M.	5 0 0	6 0 0	6 0 0		6 0		14
•	5	Caterham (Lim.)							
• 620	2	Cawood (Limited)	2 0 0	nil.			7 6	0 6	
• 339	5	Chard (Limited)	0 10 0						
• 300	5	Charing (L.)	5 0 0	5 0 0			8 4	0 10	
•		Chase Town (Lim.)							
• 720	5	Chatteris	5 0 0	7 10 0	6—7		7 6	0 10	16
• 300	10	Cheadle	10 0 0	6 0 0	12 10 0				
• 200	50	Chelmsford	50 0 0	8 0 0	70 0 0				
200	25	Do., new shares	25 0 0	8 0 0	35 0 0				
• 25000	Sk.	*Cheltenham*, stock	50 0 0	10 0 0		4/ & 5/	3 8		
50000	Sk.	Do., stock	50 0 0	7 10 0			3 11	Nil.	16
500	50	Do., new shares	10 0 0	7 0 0			4 7		
• 500	10	*Chepstow*, A shares							
200	10	Do., B shares							
• 600	5	*Chertsey Consumrs*	5 0 0	7 0 0	5 10 0	6 0	6 0	0 6	18
600	1½	Do.	1 10 0	7 0 0	1 10 0				
600	2½	Do.	2 10 0	7 0 0	2 12 6				
250	10	Do.	10 0 0	7 0 0	11 0 0				
• 230	10	Chesham	10 0 0	5 0 0	10 10 0				
• 30000 *l*	Sk.	*Chester United*	Stock.	10 0 0	172—174				
30000 *l*	,,	Do., preference	,,	17 0 0	129—131				
535	10	Do, new shares	10 0 0	7 0 0	14 0 0				
• 250	5	Chester-le-Street	5 0 0	6 0 0	5 0 0				
• 112000 *l*	Sk.	*Chesterfield Gas and Water*	100 0 0	7 0 0	100 0 0		4 0	Nil.	15
8000 *l*	Sk.	Do., guar. stock	100 0 0	5 0 0	100 0 0				
400	50	Do., preference	50 0 0	5 0 0	55 0 0				
2120	10	Do., do.	10 0 0	5 0 0	11 0 0				
580	10	Do., ordinary	10 0 0	7 0 0	10 0 0				
1700	10	Do., new	10 0 0	7 0 0	10 0 0				
•		Chesterton (L.)							
• 1100	10	*Chichester*	10 0 0	5 0 0		5 0	5 0		14¾
700	10	Do.	5 0 0	5 0 0					
•		*Chigwell & Woodford Bridge (Limited)* £10,000							
•	5	Chilham Consumers (Limited)							
•		Chipnenham					5 10	0 10	
• 329	10	Chipping Nort. (L.)	10 0 0	5 0 0					
• 100	10	Chipping Ongar	10 0 0	2 10 0	5 0 0				
•	5	Chipping Sodbury (L.)							
•		Chowbent, Lanc.							
•		Christchurch							
•	5	Chudleigh (Lim.)							
• 200	5	Church Stretton (L.)	5 0 0		5 0 0				
• 630	10	Cirencester	10 0 0	5 0 0	11 0 0				
•		Clay Cross							
• 2500	10	*Clayton, Allerton, & Thornton*	10 0 0	7 0 0	16 0 0	5 0	5 0	0 4	16·5
500	10	Do., A	10 0 0	7 0 0	13 7 6				
1000	10	Do., B	5 0 0	7 0 0	7 2 6				
•		*Cleethorpes*							
• 12000	10	*Clevedon* (L.)	10 0 0	5 10 0		5 6	5 6	0 6	
• 250	6	*Clitheroe*	6 0 0	5 0 0	6 0 0	5 0	4/3—4/10	0 3	16·2
500	1	Do.	1 0 0	5 0 0	5 0 0				
220	10	Do.	10 0 0	10 0 0	24 0 0				
500	2½	Do.	2 10 0	10 0 0	24 0 0				
1925	10	Do.	5 10 0	7 10 0	8 17 6				
• 327	1	Cobham (Limited)	1 0 0						
• 1132	5	Cockermouth	5 0 0	7 0 0	6 10 0		5 6	1 0	13
• 600	5	Coggeshall	5 0 0	5 0 0	5 0 0		6 8	0 8	
300	5	Do., preference	5 0 0	5 0 0	5 0 0				
• 1850	20	*Colchester*	20 0 0	5 0 0		4 3	4 3		14·5
600	20	Do.	20 0 0	7 0 0	22 10 0				
•		Coleford, Gloucester							
• 930	2½	Coleshill (Lim.)	2 10 0	6 0 0	2 15 0		6 8	0 10	
• 160	10	Collingham (Lim.)	10 0 0	5 0 0	10 0 0				
• 360	5	Colnbrook, Middlsex	5 0 0	2 0 0			7 6	1 0	
• 675	20	Colne, Lancashire	20 0 0	10 0 0			3/6—4/2	Nil.	14
1500	10	*Colney Hatch*	10 0 0	5 0 0	10 0 0		5 0	Nil.	14
1000	10	Do.	9 0 0	5 0 0	10 0 0				
• 320	5	Conway (Limited)	5 0 0		5 0 0				
•		Corsham							
•		Corwen							
• 1200	10	Cottenham							
• 1600	25	*Coventry*	25 0 0	6 0 0	31½—32½				
800	25	Do., A shares	25 0 0	6 0 0	29½—30½				
800	25	Do., B shares	12 10 0	6 0 0	12 12 6				
• 400	5	Cowbridge	5 0 0	6 0 0	6 0 0				
• 500	10	Cowes	10 0 0	5 0 0					
• 2000	10	*Cradley Heath*							
• 190	10	Cranbrooke, £1900	10 0 0	7 10 0					
•		Crawley		4 10 0			7 6		
•		Crayford & Bexley							
• 1000	10	*Grays*	10 0 0	8 0 0	12 0 0	6 0	6 0	Nil.	14
420		Crediton	5 0 0	5 0 0	6 0 0				
• 350	10	Crewkerne	10 0 0	6 0 0	10 0 0		6 8	0 10	
•		*Crickhowell Gas and Water*							
• 200	5	Cricklade (L.)	5 0 0	2 10 0	3½—5		8 6	1 0	
• 200	10	Croft & Hurworth	9 0 0						
• 1200	1	Crook (Limited)	1 0 0	10 0 0	1 0 0				
•		Croston (Limited)							
• 251	5	Crowland	5 0 0	5 0 0			7 6	0 9	
• 181	10	Crowle, Lincoln	10 0 0	10 0 0					
• 4000	5	*Croydon Commercial*	5 0 0	10 0 0	8 —8½	5 0	4 3	Nil.	15
4000	5	Do.	5 0 0	10 0 0	8 —8½				
9770	5	Do.	5 0 0	7 0 0	6 —7				
5830	5	Do.	1 0 0	7 0 0	6 —7				
2320	5	Do.	5 0 0	10 0 0	8 —8½				
•		Cuckfield					7 6	0 10	
• 1000	2	Cullompton	2 0 0	5 0 0			7 0	Nil.	
•	10	Darenth Vale (L.)							
• 250	20	*Dartford*	20 0 0	7 0 0	27 0 0				
• 700	5	Dartmouth (Lim.)	5 0 0	6 0 0	6 0 0		6 8	0 10	
• 125	20	Daventry	20 0 0	8 2 6	28 0 0		6 3	0 5	
125	10	Do.	8 0 0	0 13 0	11 0 0				
• 165	10	Dawley	10 0 0	5 0 0	10 0 0				
• 600	5	Dawlish	5 0 0	5 0 0			6 8	Nil.	14
• 1400	10	*Deal & Walmer*	10 0 0	8 0 0	12 0 0	6 0	5 10	Nil.	14
1400	1¼	Do.	1 5 0	4 0 0	1 0 0				
550	10	Do.	5 0 0	7 0 0	6 5 0				
• 1200	1	Deddington	1 0 0						
•		Dedham (L.) £1000							
•		Delph, Yorkshire							
• 500	6	Denbigh	6 0 0	5 0 0	6 0 0				
• 2000	25	*Derby*	25 0 0	10 0 0	50 0 0	None	2/10—3/2	Nil.	15—16

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
• 7000	5	*Devonport*	5 0 0	10 0 0	9—10	6 0	4 6	0 6	14
3000	5	Do., preference	4 0 0	6 0 0	4—4½				
• 7400	5	*Dewsbury and Batley*, B shares	5 0 0	7 10 0	7 12 6				
7600	5	Do., C shares	3 15 0	7 10 0	6 2 6				
•		Dipton (Limited)							
• 700	5	Diss	5 0 0	10 0 0			6 8	0 10	
• 400	5	Dolgelly	5 0 0						
400	2½	Do., new shares	2 10 0						
• 160	10	Donnington	10 0 0	5 0 0	10 0 0				
• 340	30	Dorchester	27 10 0	6 0 0	30 0 0		5 10	Nil.	14
• 120	25	*Dorking*	24 0 0	5 0 0	25 0 0				
•		Donnington, Lincoln.							
• 629½	25	Douglas, I. of Man	25 0 0	4 0 0	42 0 0	6 9	6 9	0 10	17
21945 *l*	Sk.	*Dover*	100 0 0	6 10 0	125 0 0	5 3	4 9	0 9	14
2405	10	Do., new shares	10 0 0	8 0 0	15 0 0				
• 500	10	Dowlais (Limited)	10 0 0	8 0 0	15 0 0		5 0	0 6	14
500	4	Do.	4 0 0	8 0 0	6 0 0				
500	6	Do.	4 0 0		4 0 0				
• 285	60	Downham Market	10 0 0	5 0 0	10 0 0		6 8	0 10	
• 2006 *l*		Downton (Limited)							
•		Driffield							
• 3060	5	*Drighlington & Gildersome*	5 0 0	7 10 0	7 15 0				
534	10	Do.	3 0 0	7 0 0					
•		Droitwich							
• 1100	20	*Droylsden*	10 0 0	8 0 0	15 0 0				
• 900	30	*Dudley*	30 0 0	10 0 0	45 0 0	None	3/6—3/9	0 6	12—15
485	30	Do., pref. shares	30 0 0	5 0 0	28½—29½				
800	10	Do., new shares	5 0 0	10 0 0	7 15 0				
• 550	10	Duffield, Allistree, & Quorndon (Lim.)	10 0 0	4 10 0	10 0 0		5 9	Nil.	15
• 1500	20	*Dukinfield*	20 0 0	10 0 0 / 8 0 0	42 10 0	5 0	3/6—4/6	Nil.	18
• 300	10	Dunmow	10 0 0	5 0 0	10 0 0		7 6	0 10	
• 500	10	*Dunstable*	10 0 0	10 0 0	18 10 0	5 0	5 0	Nil.	17
500		Do.	7 0 0	10 0 0	15 0 0				
1000		Do.	2 0 0	5 0 0	2 2 0				
• 900	10	*Durham*	10 0 0	10 0 0	£26				
900	10	*Do., new shares*	5 10 0	10 0 0					
• 460	10	Dursley, Gloucester	10 0 0	5 10 0	11 0 0		5 8	0 10	14
• 150	5	Eastingwold	5 0 0	5 0 0	5 0 0		8 4	1 8	
• 2000	10	*Eastbourne*	10 0 0	8 0 0	15 0 0	5 0	5 0	Nil.	14
•		°East Ardsley				7 6			
• 90	20	East-Dereham	20 0 0	5 0 0	21 0 0				
• 386	5	East Grinstead	5 0 0	7 10 0	5 0 0		7 6	1 3	
•		Easton (Limited)		5 0 0					
• 1200	5	East Retford	5 0 0	10 0 0	7 10 0				
• 2410	5	*Eccleshill & Bolton*	5 0 0						
1190	5	Do.	1 0 0						
•		Eckington & Mosboro'							
•	10	Edenbridge (L.) £2000							
•		Edgware							
•		Egremont, Cumber.							
• 1801	10	*Elland*	10 0 0	10 0 0	20 0 0		4 7	0 5	
699	10	Do., preference	10 0 0	2 0 0	4 0 0				
300	10	Do., preference	10 0 0	5 0 0	10 0 0				
• 800	5	Elsecar (Limited)	5 0 0	5 0 0	5 12 0				
•		°Elstree				6 0			
•		Eltham							
•		Ely (Limited)					6 0	1 0	
• 200	10	Emsworth							
• 400	5	*Enfield*	5 0 0	5 0 0	5 0 0				
•		Epping (Limited)							
• 300	19	Epsom & Ewell	19 0 0						
•		Erith							
• 360	15	*Eton*, A shares	15 0 0	8 0 0		7 0	7 0	0 6	20
50	15	Do., B shares	15 0 0	5 0 0					
• 700	10	Evesham (Limited)	10 0 0	7 0 0	11—12				
• 1600	25	*Exeter*	25 0 0	8 0 0	40—42				
• 250	10	*Exmouth*	10 0 0	5 0 0	10 0 0				
• 90	25	Eye	25 0 0	5 0 0	25 0 0		7 4	0 10	15
• 170	10	Fairford	10 0 0	3 0 0			7 6	0 6	14
• 341	10	Fakenham (L.), £3300	10 0 0						
•		Falkingham							
• 10765	1	Falmouth (Limited)	1 0 0	5 0 0	1 3 3		6 8	0 9	
• 6955 *l*	Sk.	*Fareham*	100 0 0	6 0 0	110 0 0				
• 256	25	Farnham	25 0 0	7 0 0	35 0 0		5 10	0 10	
•		Farnsfield					7 6	0 10	
• 1200	10	*Farnworth & Kears*	10 0 0	10 0 0		5 6	4 0	Nil.	18
1200	10	Do.	10 0 0	7 0 0					
1800	10	Do.	6 0 0	7 0 0					
•		Farringdon							
• 140	50	Faversham	50 0 0	10 0 0	75 0 0		5 3		13·5
•		Fazeley (L.) £3000							
• 120	10	Fenny Stratford (L.)	10 0 0	5 0 0	11 0 0				
•	5	Filey	5 0 0	5 0 0	5 0 0				
•	5	Finedon (L.) £2000							
• 10000 *l*		Fleetwood		8 0 0			6 3		16
400	10	°Do.		7 0 0					
• 4160	10	*Folkestone*	10 0 0	10 0 0	19 0 0	5 0	5 0	0 9	14·5
• 340	5	Framlingham	5 0 0	6 0 0	5 15 0		7 1	0 10	
• 2000	1	Frodsham (Limited)	1 0 0	5 0 0	1 5 0		6 8	0 10	18—20
• 480	25	*Frome*	25 0 0	10 0 0	50 0 0	5 0	4 7	0 5	14
240	25	Do.	12 10 0	7 0 0	18 0 0				
•		*Furness Gas & Water*							
• 12000 *l*	Sk.	*Gainsborough*	All.	10 0 0	170 0 0	5 6	4 0	Nil.	12½-13
400	20	Do., new shares	10 0 0	10 0 0	17 0 0				
• 147	10	Gillingham (Limited)	10 0 0	5 0 0	8 0 0		9 2	1 8	
• 103	25	Glastonbury	25 0 0	4 0 0	15 0 0				
• 600	10	*Glossop*	10 0 0	10 0 0	16 0 0	6 0	4/2—5/5	10d 5d	17
600	5	Do.	5 0 0	10 0 0	8 0 0				
1800	10	Do., new shares	9 0 0	7 10 0	12 17 6				
• 1000	25	*Gloucester*, A shares	25 0 0	10 0 0	40 0 0	5 0	4 0	Nil.	15·35
856	25	Do., B shares	21 15 0	7 10 0	29 0 0				
• 700	5	Godalming	5 0 0	5 0 0	5 0 0		6 8	0 8	14
90	10	Do., new shares	10 0 0	5 0 0	10 0 0				
800	20	Do., do.	20 0 0	5 0 0	20 0 0				
•	5	Golborne (L.) £5000							
• 621	5	*Gomersal*	5 0 0	6 0 0	6 7 6				
•		Gorleston & Strathdn.							
• 855	25	*Gosport*	25 0 0	8 0 0	36				
•	5	Goudhurst (Limited)							
•		*Grange & Cartmel*							
• 1300	20	Grantham	20 0 0	8 0 0	0 0		5 0	0 5	14
• 1000	20	*Gravesend*	20 0 0	8 0 0	21 0 0				
•		Grays Thurrock							
• 643	5	Gt. Berkhampstead	10 0 0	6 0 0	5 10 0				
• 1000	10	*Great Grimsby*	10 0 0	10 0 0	20 0 0				
1000	6½	Do., new shares	6 10 0	10 0 0	13 0 0				
1627	10	Do., do.	10 0 0	7 0 0	14 0 0				
• 700	5	Great Harwood	5 0 0	4 5 0					
280	5	Do., new shares	1 0 0						
• 210	10	Great Marlow	10 0 0	5 0 0	10 0 0				
•		Great Stanmore							
•		Great Torrington							

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
450	5	Great Wigston	5 0 0	6 0 0					
150	1	Do., new shares	1 0 0	6 0 0					
	5	Greenhithe (Limited)							
	5	Grigley-on-the-Hill (Limited)							
1300	20	Guernsey	14 0 0		23 0 0				
352	25	*Guildford*, A shares	25 0 0						
352	3	Do., B shares	3 0 0						
		Do., new shares							
25	200	Guisborough	115 0 0	8 0 0					
	44/5	Haddenham (Limited)							
600	5	Hadleigh Cons. (L.)	5 0 0						
240	5	Hadlow (Limited)	5 0 0						
140	10	Hailsham	10 0 0	6 0 0	10 0 0				
40	50	Halesowen	50 0 0	6 0 0					
300	5	Halesworth	5 0 0	7 10 0	6 0 0		6 8	0 10	
		Do., subscription stock, £900							
240	5	Haltwhistle (Lim.)	5 0 0	10 0 0	5 0 0		5 10	Nil.	12
		Hampton Court							
500	10	Hanley, (British)	10 0 0	5 0 0	10 0 0				
500	5	Harrington	4 0 0	8 0 0					
13333½	Sk.	*Harrogate*, A stock		7 10 0	150 0 0	6 0	6 0	0 10	16½
18000/	Sk.	Do., B stock		7 10 0	140 0 0				
		Harrow-on-the-Hill							
6300	5	*Hartlepool Gas and Water*	5 0 0	10 0 0	8 15 0	5 0	4 6	0 6	15·27
13200	5	Do., new shares	5 0 0	7 10 0	7 5 0				
6597	5	Do., do.	5 0 0	7 0 0	6 15 0				
8770	5	Do., do.	2 10 0	7 0 0	3 15 0				
1000	1	Hartley Wintney	1 0 0	2 10 0	21s—23s				
		Harwich							
300	5	Haslemere							
662	6	*Haslingden*	6 0 0	10 0 0	10 0 0		5 5		
343	6	Do., A shares	4 0 0	10 0 0	6 0 0				
1650	25	*Hastings & St. Leonards*	25 0 0	8 0 0	37 10 0	5 0	5 0	1 0	14·50
1500	20	Do.	20 0 0	7 0 0	27 0 0				
750	20	Do.	12 0 0	5 0 0	13 0 0				
	1	Haswell Gas & Water (Limited)							
480	15	Hatfield	5 0 0	5 0 0	5 0 0		6 0	Nil.	16
	5	Hatherigh (L.) £2000							
		Harlow & Saworidgeworth							
500	5	Havant	5 0 0	3 0 0	5 0 0				
120	10	Haverhill	10 0 0	5 0 0	10 0 0				
1850	5	Hawick	5 0 0	13 0 0	10 0 0		7 1	1 3	32
400	5	*Hawkhurst (Lim.)	5 0 0	4 0 0	5 0 0	7 6	7 6	Nil.	14
450	5	Hay (L.), Brecon	5 0 0	5 0 0	5 0 0		6 8	0 8	13
		Haydon Bridge							
8500	Sk.	*Hebden Bridge*	Stock	10 0 0	200 0 0				
250	10	Do.	10 0 0	7 0 0	12 16 0				
170	10	Heckington (Lim.)	10 0 0		10 0 0				
		Heckmondwike							
120	10	Hedon (Limited)	10 0 0	2 10 0	10 0 0		9 2	2 6	
145	12	Helston	12 0 0	9 0 0					
1787	5	Hemel Hempstead	5 0 0	7 0 0	7 2 6		5 5	0 5	15¾
500	10	Henley (Limited)	10 0 0	5 10 0	10 0 0		7 0	1 0	13
300	10	Herne Bay	10 0 0	6 0 0	11 0 0				
1300	10	*Hertford*	10 0 0	7 0 0			6 0	0 6	15·7
100	10	Do.	10 0 0	5 0 0					
		Hessle (L.) £1500							
270	10	Hexham	10 0 0	8 0 0	13 0 0				
160	10	Higham Ferrers	10 0 0	7 0 0	12 0 0				
	5	Highbridge (Lim.)							
		Highworth, Wilts							
1480	5	High Wycombe	5 0 0	6 0 0	6 0 0		5 7	Nil.	14
2000	10	Hinckley (Limited)	6 0 0	5 0 0	6 10 0		5 5	0 10	12
200	20	Hitchin	20 0 0	8 0 0					
200	5	Do., new shares	5 0 0	8 0 0					
1000	5	Hoddesden	5 0 0	10 0 0	7 10 0		6 8	10 p.c.	
	5	Hogsthorpe (L) £1000							
		Holbeach £2000						0 10	
	5	Hollingbourne (Lim.)							
600	20	*Holmfirth*	19 0 0	6 10 0	21 10 0				
		Holt (Limited)							
1315	5	Holyhead	5 0 0	7 10 0	9 0 0				
		Holywell (*see* Brit. Prov.)							
98	25	Honiton	25 0 0	3 12 0	20 0 0				
1250	1	Honley (Limited)	1 0 0	5 0 0	1 0 0				
6	500	Horncastle	£500					0 10	
	5	Hornchurch (Lim.)							
		Hornsey (Limited)							
1200	2½	Horsforth	2 10 0		2 10 0				
303	20	Horsham	20 0 0	10 0 0	30—32		5 10	0 10	
	10	Houghton-le-Spring	10 0 0	8 10 0	27—30				
		Howden					10 0	2 6	
320	5	Hucknall, &c. (Lim.)							
250	20	*Huddersfield*, new sh.	15 0 0	10 0 0					
		Hull							
		Hull-Scalcoates (*see* Brit. Provincial)							
210	10	Hungerford	10 0 0	5 0 0	10 0 0				
1200	10	*Huntingdon*	10 0 0		17—18		6 3	1 3	
		Hunstanton (Lim.)							
250	10	Hunton Bg. & Abbot's Langley (Lim.)	10 0 0						
		Hurstpierpoint							
1320	10	*Huyton & Roby*	10 0 0	8 0 0			7 0	0 4	18
	10	Do., new shares	9 0 0	7 0 0					
2500	10	*Hyde*	10 0 0	10 0 0	18 10 0	6 0	3/6—4/6	0 6	18
1100	10	Do.	6 0 0	7 10 0	10 0 0				
	5	Hythe (L.) £2000							
706	10	*Hythe & Sandgate*	10 0 0	5 0 0	10 0 0				
5000/.		Ilford				6 0			14
2500/.		*Do.		7 0 0					
198	12	*Ilfracombe*	2 0 0	4 0 0	8—9				
560	6½	Ilkestone	6 5 0	11 4 0	8 0 0				
	10	*Ilkley*	10 0 0		13—15				
	10	Do.	2 0 0		3—4				
		Ilminster							
250	5	Ingatestone (Limited)	5 0 0	1 10 0					
2800	10	*Ipswich*	10 0 0	10 0 0		5 0	4 3	0 6	14·28
2000	10	Do.	10 0 0	7 10 0					
		Ironbridge							
180	10	Irthlingborough	10 0 0	7 0 0	10 0 0				
800	30	*Isle of Thanet* (Margate & Rams.)	30 0 0	10 0 0	45—50		5 0	0 6	
		Jersey, St. Helier's							
		Kegworth							
363	5	Kelvedon (Limited)	5 0 0						
2240	10	*Kendal Unit. Gas & W.*	10 0 0	10 0 0	21 0 0	Nil.	5 0	0 5	17
380	20	Do., preference	20 0 0	7 10 0	33 0 0				
290	10	Kenilworth (Limited)	10 0 0	4 0 0	10 0 0				

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
950	5	Keswick	5 0 0	5 10 0	6 2 6		5 8		16
272	25	Kettering	25 0 0	4 0 0	30 0 0		5 10	0 10	
		Ketton (L.) Rutland		7 0 0					
	5	Keymer & Ditchling (Limited)							
		Keynsham							
500	5	Kibworth	5 0 0	6 0 0	7 0 0				
		Kidderminster		5 0 0					
924	10	*Kidsgrove*	10 0 0	10 0 0	15 0 0	4 6	4 6		14
150	10	Kimbolton	10 0 0	7 0 0	12 0 0				
140	7	Kingsbridge	7 0 0	8 0 0	10 0 0		6 8	1 8	
		Kingsclare							
370	5	King's Cliffe	5 0 0	4 10 0	5 0 0		8 4	0 10	14
3200	10	*King's Lynn*	10 0 0	5 0 0		4 0	4 0	Nil.	14
		Kingston-on-Thames					5 6		
		Kingswinford District (Limited)							
		Kington, Hereford							
400	5	Kinver, Staffordshire	5 0 0		5 0 0				
	1	Kippax (Limited)							
		Kirby Lonsdale							
		Kirkburton							
400	5	Kirkby Stephen (L.)	5 0 0	6 0 0			6 3	0 10	
330	5	Kirkham, Lancash	5 0 0	6 0 0	7 0 0		5 10	0 10	15
660	2½	Do., new shares	2 10 0	6 0 0	3 0 0				
	5	Kirkheaton, Dalton, & Lepton (Lim.)	5 0 0	7 10 0			5 0	Nil.	13—14
200	10	Kirton-in-Lindsey	10 0 0	5 0 0	10 10 0				
200	5	Knighton (L.)	5 0 0						
1000	10	*Knottingley*							
1600	5	*Knutsford Gas & W. (Limited)	5 0 0	6 0 0	5 10 0				
		Lamborne (L.) £1200							
	5	*Lampeter, Llandssl., Tregaron, and Aberayron*							
30000/	Sk.	*Lancaster*	All.	10 0 0	205 0 0	5 6	4/—5/	Nil.	18
	5	Langley Mill & Heanor (Limited)							
50	25	Langport	5 0 0	4 0 0	15 0 0				
		Launceston							
		Lea Bridge							
1500	20	*Leamington Priors*	20 0 0	10 0 0	30—32				
1500	20	Do., new shares	11 0 0	7 0 0	15—15				
380	10	Leatherhead	10 0 0	8 0 0	12 0 0		6 6	Nil.	14
		Ledbury							
		Leeswood (Limited)							
4900	13	*Leicester*	13 0 0	1 3 0 per Sh.	24 0 0	4 6	3 0	Nil.	15
5600	10	Do., new shares	10 0 0	7 10 0	16 0 0				
10,000	10	Do.	2 0 0	7 0 0	3 10 0				
		Leigh £2000		7 0 0					
355	21	Leighton Buzzard	21 0 0	8 0 0	30 0 0		5 10	0 5	
243	10½	Do.	10 10 0	8 0 0	15 0 0				
500	16	*Leominster	10 0 0	8 0 0	14 0 0	5 10	5 0	0 10	15½
250	10	Do., new shares	10 0 0	7 0 0	12 0 0				
330	25	Lewes, A shares	25 0 0	9 0 0	40 5 0		5 0	Nil.	14
1744	5	Do., B shares	5 0 0	9 0 0	8 0 0				
245	5	Leyburn, Yorkshire	5 0 0		6 0 0				
		Leyland, Lancashire							
250	20	Lichfield	20 0 0	10 0 0	40 0 0				
320	25	*Lincoln*	25 0 0	10 0 0	50 0 0	4 6	4 2	0 10	15
400	50	Do.	20 0 0	7 0 0	22 0 0				
105	5	Lindfield (Limited)	5 0 0	2 0 0			8 4	0 10	
240	5	Liskeard	5 0 0	7 10 0	6 0 0				
		Littleborough							
240	5	Littlehampton	5 0 0	10 0 0	5 0 0				
	5	Littleport (L.) £2000							
561000	Sk.	*Liverpool United*	£100	10 0 0	203 0 0	4 6	3 9	0 6	20
5459	25	Do.	25 0 0	7 0 0	35 10 0				
21,803	7½	Do.	1 10 0	7 0 0	2 17 6				
	10	Llanberis (Limited)							
239	5	Llandovery (Limited)	1 10 0	7 0 0					
1500	10	Llandudno Gas & W. (Limited)	10 0 0	7 0 0	12 0 0				
		Llanelly £3000							
		Llanfyllin (L.) £2000							
		Llangollen							
250	10	Llanrwerst (Limited)	9 15 0	5 0 0	9 15 0				
	5	Llantrissant (L) £2000							
	10	*Llynvi Valley*							
272	5	Loddon	5 0 0	3 0 0	5 0 0				
		Long Buckby (Lim.)							
	5	Longwidg..(L.) £10,000							
120	10	Long Sutton (Lim.)	10 0 0	10 0 0	13 5 0		7 6	0 10	
120	5	Do.	5 0 0	10 0 0	6 15 0				
2000	10	*Longton*	10 0 0	10 0 0	15—16	3 6	3 6	Nil.	14
1000	10	Do., new shares	2 0 0	7 0 0					
		Longwood, near Huddersfield							
1250	5	Lostwithiel	5 0 0	5 0 0	6 0 0		8 4	0 10	
250	1	Do., new shares	1 0 0	5 0 0	1 5 0				
1666	8	*Loughborough*	8 0 0	8 0 0	10 5 6		4 3	0 3	14
1667	7	Do.	2 10 0	2 10 0 per Sh.	2 15 0				
240	25	*Louth*	25 0 0	10 0 0	44 0 0	None	5 0	0 10	14
2500	10	*Lowestoft Gas & W.*							
1138	5	Ludlow	5 0 0	5 0 0	5 0 0		6 4	0 10	14
640	10	*Luton*	10 0 0	7 10 0	12 0 0				
640	5	Do., preferential	5 0 0	4 0 0	5 0 0				
640	5	Do., new shares	5 0 0	7 10 0	6 0 0				
100	20	Lutter (Lim.) £2000	20 0 0	6 5 0	25 0 0				
184	5	Lydd (L.)	5 0 0	2 10 0			3 4	Nil.	
		Lydney							
63	20	Lyme R.	20 0 0	4 0 0	20 0 0				
300	25	Lymington	25 0 0	7 10 0	25—27		7 6	1 8	14
300	10	Maidenhead	10 0 0	5 0 0	10 0 0				
500	25	*Maidstone*, A shares	25 0 0	10 0 0	51—52		4 6		
500	25	Do., B shares	25 0 0	4 0 0	23—24				
	25	Do., new shares	25 0 0	7 10 0	39—40				
204	23	Maldon	23 0 0	7 0 0	27 0 0				
200	10	Malmesbury	10 0 0	2 10 0	5 15 0				
		Malpas (Limited)							
825	10	Malton	10 0 0	8 0 0	16 0 0		4 6	Nil.	14
793	7	Do.	7 0 0	8 0 0	11 15 0				
1200	5	Malvern Link	5 0 0	6 0 0	6 0 0		5 10	Nil.	16
		Manningtree							
300	50	*Mansfield*	50 0 0	10 0 0	100 0 0				
300	50	Mansfield	50 0 0	10 0 0	98 0 0	6 0	3/9—4/10	0 6	
		March							
		Margate (*see* Isle of Thanet)					5 0	0 6	
	10	Market Deeping (L.)					7 6		
		Market Drayton							

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
132	25	Market Harborough	25 0 0	7 0 0	35 0 0				
		Market Weighton							
		Markyate Street (L.)							
		Marlborough		Nil.			7 6	1 8	16
150	10	Marsden (Limited)	10 0 0	5 0 0	10 0 0				
	5	Marlock (L.) . £2000							
9384	8k.	*Maryport Town &*	100 0 0	5 0 0		4 0	4 0	0 5	16
199	10	Do. . . [*Harbour*	10 0 0	5 0 0					
600	5	Matlock (Limited) .	5 0 0	6 0 0					
508	5	Matlock Bridge, Matlock Bank, & Matlock Town (Limited)	5 0 0	6 0 0					
200	2	Measham (Limited) .	1 12 6	5 0 0					
220	10	Melbourne	10 0 0	6 0 0	12 0 0				
28	50	Melksham	50 0 0	5 0 0	70 0 0		6 8	1 8	14
28	50	Do.	21 10 0	5 0 0					
934	2	Meltham	2 0 0	4 10 0					
220	20	Melton Mowbray (L.)	20 0 0						
1950	1	Menai Bridge	1 0 0		0 17 6				
50	10	Mere	10 0 0						
330	25	*Merthyr Tydvil*	35 0 0	10 0 0	50 0 0	5 0	5 0	1 0	15
330	20	Do.	20 0 0	5 0 0	20 0 0				
3300	8k.	Do., preference	All.	5 0 0	100 0 0				
120	10	Middleham	1 0 0	5 0 0	10 0 0				
		Middleton-in-Teesdale.							
		Middletn & Dinsdale (L							
400	5	Midhurst (Limited) .	5 0 0	2 10 0	5 0 0				
223	10	*Midsomer Nor. (L.)	10 0 0	nil.	10 0 0	7 0	5 0	Nil.	14
198	5	Mildenhall	5 0 0	5 0 0					
513	10	*Milnrow* (Limited)	10 0 0	5 0 0					
300	5	Milnthorpe (L.) . £1500	4 10 0	3 6 8					
184	10	Milverton (Limited) .	10 0 0	5 0 0	10 0 0				
6000	5	*Mirfield*	5 0 0	10 0 0	10 0 0	5 0	5 0	0 6	14½
3633	10	*Mitcham & Wimble.*	10 0 0						
3633	10	Do., new shares	3 0 0						
1020	10	*Mold Gas & Water*	10 0 0	6 10 0	12 10 0	4 9	4 9	Nil.	14
700	10	Monmouth Gas & W.	10 0 0	10 0 0	17 0 0	7 0	6 0	1 0	14
378	10	Do.	10 0 0	4 0 0					
100	10	*Do.	10 0 0	7 0 0					
250	5	Montgomery (Lim.)	5 0 0						
300	5	Morecambe (Limited)	5 0 0	8 0 0	7 15 0		5 10	0 5	18
800	5	Do.	2 15 0	8 0 0	7 0 0				
	5	Moretonhmpstd. (L.)							
150	10	Moreton-in-Marsh	9 2 6	4 0 0	9 2 6				
1000	5	*Morley*, near Leeds	5 0 0	10 0 0	8 10 0				
1000	2	Do.	2 0 0	10 0 0	3 8 0				
220		Morpeth	19 10 0	5 0 0	40 0 0				
		Mossley							
		Mottram							
	30	Nantwich (Limited)							
	2	Narberth (L.) . £2000							
		Nayland							
		Neath							
1000	10	*Neath New*	10 0 0	10 0 0	10 0 0	5 6	5 6	1 4	15·5
600	10	Do.	10 0 0	7 10 0	10 0 0				
113	10	Do.	2 0 0	7 0 0	10 0 0				
185	10	Needham Market	10 0 0	3 10 0	10 0 0		7 6	0 10	
		Netherthng (L.) £700.							
		Newark		10 0 0					
		Newburn							
250	20	Newbury	20 0 0	5 0 0	20 0 0				
350000	100	*Newcastle & Gateshd.*	100 0 0	5 0 0	105 0 0	4 0	4 0	0 8	14
		Newcastle-und.-Lyne							
250	5	Newent	5 0 0						
365	10	Newhaven, Sussex	10 0 0	6 0 0	10 0 0		6 6	0 10	14
600	5	Newmarket	5 0 0	4 0 0	4 0 0				
366	2	Do., preference	2 0 0	6 0 0	2 0 0				
		New Mill (L.) . £7000							
200	20	*New Mills & Hayfield*	20 0 0	7 10 0					
70	20	Newnham (Limited)	20 0 0	10 0 0	37 10 0				
	5	Newport, Essex (L.), £2000.							
		Newport, I. of Wight							
		Newport Pagnell							
360	35	*Newport*, Mon., A sh.	35 0 0	10 0 0	52 0 0	5 0	3/—4/	Nil.	14
500	35	Do., B shares	35 0 0	7 10 0	42 10 0				
230	35	Do.	25 0 0	7 10 0	27 10 0				
		Newport, Salop							
250	5	New Romney (Lim.)	5 0 0	5 0 0	5 0 0		8 4	Nil.	
	20	Newton Abbott							
250	10	Newtown, Montgmy	10 0 0	6 0 0	11 0 0		5 10	0 10	16
	5	Northallerton							
777	20	*Northampton*, A sh.	20 0 0	10 0 0	36 0 0	5 0	5 0	1 0	14
777	20	Do., B shares	20 0 0	4 0 0	14 10 0				
777	20	Do., C shares	20 0 0	7 10 0	27 5 0				
2351	5⅔	Do., D shares	5 13 4	7 10 0	8 10 0				
1725	20	Do., E shares	10 0 0	7 0 0	12 0 0				
	1	*North Bierley*	1 0 0		1¼—1⅜				
		Northfleet							
		Northleach							
		North Middlesex				5 0			
633	5	North Ormesby (L.)	5 0 0	7 0 0	6 10 0		5 6	0 6	14
120	10½	North Walsham	10 10 0	5 0 0	10 15 0				
371	15	Northwich	15 0 0	5 0 0	15 0 0				
		Norwich (British)							
4600	50	*Nottingham*	50 0 0	5 10 0	60 0 0				
	50	Do., new shares	50 0 0	5 10 0	63 0 0				
268	8	Nuneaton (Limited)	8 0 0	5 0 0	7 10 0				
125	8	Do., new shares	8 0 0	5 0 0	7 0 0				
1200	5	*Oaken Gates, Salop	5 0 0	8 0 0	7 10 0	6 0	5 6	0 6	14
240	5	Oakhampton (Lim.)	5 0 0	5 0 0	5 0 0		7 6	Nil.	
200	10	Odiham . . [hills (L.)	10 0 0	6 0 0	10 10 0				
500	5	Ogley Hay & Brown-	5 0 0	5 0 0	5 0 0				
320	5	Old Goole (Lim.)	5 0 0	6 0 0	5 0 0				
		Olney							
360	10	*Ormskirk*, old shares	10 0 0	8 0 0	14 0 0		6 0		
1080	10	Do., new shares	4 10 0	8 0 0	6 4 6				
3000	5	*Ossett*	5 0 0	10 0 0	11 0 0	5 0	4 7	0 10	14
3000	5	Do., new shares	3 0 0	7 0 0	5 0 0				
1000	10	Oswestry	10 0 0	9 10 0			5 5	0 5	14
		Otley, Yorkshire							
80	25	Oundle	25 0 0	5 0 0	25 0 0		6 8	0 10	
1694	1	Over & Wharton. (L.)	1 0 0		1 2 0				
320	5	Owston Ferry (L.)	5 0 0	5 0 0	5 0 0				
750	25	*Oxford*	25 0 0	10 0 0	50 0 0		3 9	0 3	
240	25	Do., B shares	25 0 0	5 0 0	25 0 0				
600	20	Do.	20 0 0	7 0 0	26 0 0				
2400	5	Padiham	5 0 0	7 10 0	6 10 6	5 0	5 0	0 5	16
338	2½	Painswick	2 10 0		2 10 0				
		Pangbourne (L)							
		Pately Br., Yorkshire.							
300	5	Peel, Isle of Man	5 0 0	7 0 0	6—7				
		*Pembroke Docks (L.)				6 6			
		Pembroke							
500	20	*Penistone*	19 10 0			0 6	5 5	0 5	16
	5	Penkridge (Limited)							

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
250	20	Penrith	15 0 0	6 10 0	21 0 0				
153	20	Penzance	20 0 0		15 0 0				
		Pershore							
2000	10	*Peterborough*	10 0 0	9 0 0	16 10 0				
750	10	Do.	10 0 0	7 0 0	13 10 0				
320	5	Petersfield	5 0 0	5 0 0					
300	10	Petworth	10 0 0	2 10 0	12 15 0		6 8	1 5	
1250	2	Pewsey (Limited)	2 0 0	nil.	2 0 0		8 0	2 0	18
		Pickering							
300	5	Pinxton (Limited)	5 0 0	10 0 0	9 0 0				
2500	10	*Plymouth & Stnhouse*	10 0 0	10 0 0	20 0 0	6 0	3 0	0 6	14
3000	10	Do., new shares	10 0 0	7 10 0	15 0 0				
2000	10	Do., new shares	5 0 0	7 10 0	7 10 0				
160	10	Pocklington	10 0 0		5 0 0				
		Ponder's End (L)							
		Pontefract							
		Pontypool Gas & Wat.							
		Pontypridd		4 0 0					
400	10	Poole	10 0 0	10 0 0	15 0 0		6 8	1 8	12
234	2	Do., new shares	2 0 0	10 0 0	2 10 0				
	10	Porth Cawl (Limited)							
700	5	Port Madoc (Limited)	5 0 0	5 0 0			7 6	Nil.	
		Port Talbot							
500	10	Portishead	10 0 0	4 0 0	10 0 0		6 0	Nil.	13—14
250	10	Do., new shares	2 0 0	4 0 0	10 0 0				
600	53	*Portsea Island*	53 0 0	10 0 0	82 0 0	5 6	3 9	Nil.	15½
1200	50	Do., new shares	50 0 0	10 0 0	79 0 0				
1800	50	Do., new shares	15 0 0	7 0 0	21 0 0				
120	10	Potton, Bedfordshire	10 0 0	5 0 0	10 0 0				
400	10	*Pressot*	10 0 0	5 0 0					
		Presteign							
120000	8k.	*Preston*	All.	10 0 0	212 10 0	3/4-3/9	3/4-3/6	Nil.	19—20
42000	,,	Do.	All.	7 0 0	145 0 0				
450000	,,	Do.	20 0 0	7 0 0	45 0 0				
	5	Prittlewell (L.) . £2000							
1000	10	Provincial (Hull)	8 0 0		8 0 0				
600	20	*Pudsey*	20 0 0	10 0 0	40 0 0	6 0	5 0	0 5	17½
600	6⅔	Do., new shares	6 13 4	10 0 0	13 6 8				
600	20	Do.	20 0 0	7 0 0	28 0 0				
600	6⅔	Do.	6 13 4	7 0 0	9 6 8				
600	20	Do.	16 0 0	7 0 0	24 0 0				
600	6⅔	Do.	5 6 8	7 0 0	8 0 0				
2000	5	Do.	0 10 0	7 0 0	1 10 0				
93	20	Pwllheli . . [sorrel	20 0 0	2 10 0	25 0 0				
600	5	Quorndon & Mount-	5 0 0	7 0 0	12 0 0				
900	10	*Radcliff & Pilkington*, No. 1	10 0 0						
2100	10	Do., No. 2	6 0 0						
		Rainhill							
200	20	Ramsay, I. of Man	26 0 0	10 0 0	33 10 0				
		Ramsey, Hunts							
		Ramsgate (*see* Isle of *Rastrick* . .[Thanet)					5 0	0 6	
		Rawmarsh							
20000	8k.	*Reading*	100 0 0	8 0 0	135 0 0			4/—4/6	0 3 12—14
5000	8k.	Do.	100 0 0	5 0 0	100 0 0				
3000	10	Do.	10 0 0	7 0 0	12 10 0				
500	10	Do., preference	10 0 0	5 0 0	10 10 0				
		Redbourn (L) . £1100							
1400	5	Redcar	5 0 0	4 0 0	5 0 0		6 0	0 6	
20000		*Redditch				5 6			14
4500	5	*Redhill*	5 0 0	7 0 0	6 0 0	5 6	5 6		16
		Redruth							
1451	10	Reigate	10 0 0	6 0 0	12 0 0		5 6	0 6	14·5
1200	1	Repton (Limited)	1 0 0	7 0 0	1 1 0		6 8	0 10	
3000	10	*Richmond*, Sur. (L.)	10 0 0	7 0 0	15 0 0				
1530	10	Do.				4/3-4/9	4/3-4/9	Nil.	15
		Riding Mill, Broomhaugh, &c. (L)							
400	10	*Risca & Pontyminster*	10 0 0	5 0 0					
600	5	Do.	5 0 0	4 0 0					
		Rhymney (Limited)							
400	5	Rickmansworth	5 0 0		5 0 0				
180	10	Ringwood	10 0 0	10 0 0			7 6	Nil.	
		Ripley							
		Risborough							
	5	Robertsbridge (Lim.)							
		Robin Hood's Bay							
280	50	*Rochester & Chatham*		6 0 0					
		Rochford							
2600	5	Romford	5 0 0	6 0 0	5 5 0				
220	10	Romsey	10 0 0	7 10 0	15 0 0		6 0	1 0	15
220	5	Do., new shares	7 10 0	7 10 0					
3832	10	Rossendale Union	10 0 0	10 0 0	19 5 0		5 0	0 6	19
2555	10	Do.	7 10 0	10 0 0	14 0 0				
1503	10	Do.	10 0 0	10 0 0	13 0 0				
3376	10	Do.	3 0 0	7 0 0					
		Rothwell							
		Rowley Regis & Blacheath . . . £4000							
350	10	Royston	10 0 0	5 0 0	9 10 0				
500	5	Ruabon	5 0 0	1 10 0	4 0 0				
150	20	Rugby	20 0 0	14 0 0	43 0 0		4 7	0 5	16
150	5	Do., ¼ shares	5 0 0						
150	6¾	Do., ¼ shares	6 13 4						
150	10	Do., new shares	10 0 0						
150	2½	Do., do.	2 10 0						
150	3¾	Do., do.	3 6 8						
430	10	Rugely	10 0 0	5 0 0	10 10 0				
4800	5	*Ruscorn*	5 0 0	10 0 0	9 0 0		4/6 & 5/	0 6	16
3200	5	Do.	0 5 0	10 0 0	1 0 0				
152	31¼	Ruthin	31 5 0	5 0 0	50 0 0	5/—6/8	5/—6/8		16
152	10	Do., new	8 7 6						
2540	12½	*Ryde*	12 10 0	5 0 0		5 0	5 0	Nil.	14·5
494	5	Rye	5 0 0	7 0 0	6 0 0		6 0	Nil.	
		Saddleworth							
225	20	Saffron Walden	20 0 0	5 0 0	20 0 0				
225	20	Do.	10 0 0						
1000	10	*St. Alban's*	10 0 0	7 10 0	14 15 0	5 0	4/0—5/	0 6	16·3
500	10	Do.	10 0 0	6 0 0	12 0 0				
320	5	St. Asaph (Limited)	5 0 0						
		St. Austell							
		St. Bees (Limited)							
		St. Colomb							
4600	10	*St. Helen's*	10 0 0	10 0 0		4 0	4 0	Nil.	16
1200	10	Do.	2 0 0	7 10 0					
		St. Ives, Cornwall							
		St. Mary's Cray							
		St. Neots					8 4		
320	5	Salcombe (Limited)	5 0 0	2 10 0					
880	12½	*Salisbury*	12 10 0	10 0 0	23 5 0		4 10		
160	12½	Do., preference	12 10 0	6 0 0	16 0 0				
320	12½	Do., new shares	12 10 0	8 0 0	18 5 0				
341	10	Sandbach	10 0 0	7 0 0	12 10 0		6 8	Nil.	14
		Sandown (Limited)							
381	10	Sandwich	10 0 0	5 0 0			8 4		

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
		Sandy, Beds.							
	5	Sawston (Lim.) £2000							
100	10	Saxmundham	10 0 0	5 0 0					
2000	10	*Scarborough*	10 0 0	7 0 0	13 0 0				
1000	10	Do.	6 0 0	7 0 0	12 2 6				
240	5	Sedburgh	5 0 0						
400	20	Selby	20 0 0	7 10 0	29 0 0		5 6	0 6	14—15
140	5	Settle (Limited)	3 13 4	5 0 0					
290	10	Sevenoaks	10 0 0	4 0 0	10 0 0				
400	10	Shaftesbury (Limited)	10 0 0	5 0 0	10 0 0		7 11	1 8	14
565	5	Sheepshed (Limited)	5 0 0	6 0 0	6 0 0				
135000	Sk.	*Sheffield Un.* A stock	100 0 0	10 0 0	205 0 0	4 0	3 1	Nil.	16¼
209053	Sk.	Do., B stock	100 0 0	10 0 0	203 0 0				
9976	10	Do. shares	10 0 0	7 10 0	7 10 0				
600	5	Shefford (Limited)	4 0 0						
		Shelton, Pot. (*see* B.P.)							
400	10	*Sheppy*, Sheer., A sh.	10 0 0	4 0 0		4 6	4 6	Nil.	14
1681	10	Do., B shares	10 0 0	8 0 0	13 0 0				
419	10	Do., B*	3 0 0	8 0 0					
350	10	Shepton Mallet	10 0 0	7 10 0	10 0 0				
120	10	Shepton-und.-Wychwood (Limited)							
1600	5	Sherborne	5 0 0	7 10 0	7 10 0		5 10	1 8	15
		Shiffnal, Salop							
1000	5	*Shipley*	5 0 0	6 0 0	10—10¼				
	1¾	Do.	1 13 4		3 10 0				
	10	Do.	10 0 0		19¼—20				
	3¾	Do.	3 6 8		6¼—6¾				
545	5	Shipston-on-Stour	5 0 0	3 0 0	5 0 0		8 4	Nil.	
		Shirland, Hallfield Gate, and Higham (Limited)							
		Shirley & Freemantle, Hants.							
240	25	*Shotley Bridge*	25 0 0	7 0 0	26½—27				
240	10	Do., new shares	10 0 0	7 0 0					
2500	10	*Shrewsbury*	10 0 0	10 0 0	16 0 0	6 0	3/9—4/2	5d–9d	15—16
1000	10	Do., new shares	10 0 0	7 10 0					
		Sible Hedingham							
	5	Sidmouth (L.) £4000							
7000	Sk.	*Skipton*	100 0 0	9 0 0	200 0 0	6 0	5 5	0 10	15
3500*l.*	Sk.	Do.	100 0 0	7 10 0	160 0 0				
		Slaithwaite							
800	10	Sleaford	10 0 0	6 0 0	12 10 0		6 3	0 5	14·47
250	10	*Slough*	10 0 0						
340	5	Snaith	5 0 0		4 0 0				
		Soham							
500	5	Solihull (Limited)	4 0 0						
	5	Somersham. (L.) £1500							
150	10	Somerton	10 0 0						
354	5	Southam	5 0 0						
1000	50	*Southampton*	50 0 0	7 0 0	68 0 0	4/6 5/6	4/6—5/6	0 6	14·48
1000	20	Do.	20 0 0	5 0 0	20 0 0				
1200	25	Do.	20 0 0	7 0 0	31 0 0				
2000	5	*South Bank & Normanby (L.)	5 0 0	7 0 0	5 10 0	5 0	5 0		14
		Southborough							
		Southend, Essex							
220	10	South Molton	10 0 0	5 10 0	7 10 0				
		South Petherton (L.)							
4000	10	*South Shields*	10 0 0	9 0 0	16 10 0	4/ & 5/	4/ & 5/	Nil.	14·5
2000	10	Do.	5 0 0	7 0 0	7 0 0				
248	10	Southwell (Limited)	10 0 0	5 0 0	11—11¼				
300	5	Southwold	5 0 0	3 0 0	4 0 0		6 8	0 10	
1470	1	Spennymoor (Limited)	1 0 0						
400	5	Spilsby	5 0 0						
		Spittal, Ber-on-Tweed							
2000	6¾	*Stafford*	6 13 4	10 0 0	11 0 0	5 6	4 9	0 7	14¼—¾
2000	6¾	Do., new shares	6 0 0	8 0 0	7 0 0				
178	5	Staindrop	5 0 0	6 0 0	5 0 0				
584	25	*Staines & Egham	25 0 0	7 10 0	28—30	5 6	5 6	Nil.	14
		Staithes £1500							
		Staley Bridge		10 0 0					
225	50	*Stamford & St. Mart's*	50 0 0	9 0 0	75 0 0				
	5	Stapehurst (L.) £2000							
300	10	Staveley (Limited)	10 0 0	5 0 0	10 0 0		6 8	0 10	16
300	5	Stevenage	5 0 0	5 10 0	6¾—7¼		6 8	1 8	
2500	10	*Stoke, Fenton & Long.*	10 0 0	10 0 0	15 0 0				
500	10	Do.	6 0 0	10 0 0	8 0 0	5 0	3 6	Nil.	14·38
400	5	Stone, Stafford	5 0 0	5 0 0	6 0 0				
220	10	Stoney Stratford	10 0 0	4 10 0	9 0 0				
		Storrington (L) £1000							
15000	Sk.	*Stourbridge*	All.	7 10 0		4 6	3/2—4/2	2d–5d	14·5
400	20	Do., new shares	All.	7 10 0					
1100	1	Stow-on-the-Wold	1 0 0	5 0 0	1 0 0				
150	20	*Stratford-on-Avon*	20 0 0	10 0 0	42 0 0	5 6	4 6	Nil.	15
150	5	Do., new shares	5 0 0	10 0 0	10 5 0				
450	10	Do., do.	10 0 0	7 0 0	13 0 0				
375	8	Do., pref.	8 0 0	5 10 0	9 10 0				
750	5	*Stretford*	5 0 0	9 0 0	5 0 0				
		Stroud							
261	20	Sudbury	20 0 0	7 0 0	22 0 0		6 0	0 6	14
		Sunbury (L.), Mid.							
90600	Sk.	*Sunderland*	100 0 0	10 0 0	180 0 0	4 0	4 0	0 9	14—15
30000	Sk.	Do., new	100 0 0	8 10 0	160 0 0				
200	10	Sutton Coldfield (L.)	10 0 0		10 0 0				
650	10	Sutton-in-Ashfield	10 0 0	7 10 0	15 2 6		3/9—5/0	0 5	15
600	5	Sutton & Hooton Gas & Water (Lim.)							
		Sutton Southcoates & Drypool, Hull.	20 0 0		23—24				
1737	10	Sutton, Surrey	10 0 0	6 0 0	10 10 0		5 7	0 5	14
578	5	Sutton Valence	5 0 0	2 10 0			7 6	0 10	
600	5	Swadlincote	5 0 0	5 0 0	6 0 0				
169	10	Swaffham	10 0 0	5 0 0	10 0 0		6 8	0 10	18
	5	Swanage (L.) £2500							
2370	25	*Swansea*	25 0 0	5 0 0	34 0 0	4 0	4 0	0 6	14
655	10	Swindon	10 0 0	9 0 0	13 2 6		6 3	1 3	14
685	10	Swindon New (L.)	10 0 0	4 0 0	13 2 6				
200	10	Swineshead (Lim.)	10 0 0	5 0 0	10 5 0				
1000	5	*Swinton & Mexboro'	5 0 0	7 0 0	7 0 0	5 0			
180	10	Syston	10 0 0		10 0 0				
276	5	Tadcaster	5 0 0	5 0 0	3 0 0				
		Tamworth							
		Taporley (Limited)							
		Tattershall & Coningsby (Limited)							
5600	5	*Taunton	5 0 0	6 0 0	6—6¼	6 6	5 6	1 0	16
1400	5	Do., new shares	1 0 0	6 0 0	1 1 0				
800	6¾	Tavistock (Limited)	3 3 9	10 0 0	6 10 0		5 0	Nil.	
2200	5	Tenbury Union	5 0 0	5 0 0	5¼—6				
223	10	Tenterden	10 0 0	6 0 0	13 0 0		7 1	0 5	15
200	10	Tetbury, Gloster	9 0 0	10 0 0	16 0 0				
	5	Tewkesbury (Lim.)							
200	10	Thame	10 0 0	5 0 0	10 0 0				
250	10	Thetford	10 0 0	10 0 0	15 0 0		6 8	0 10	

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
600	10	*Thirsk*	10 0 0	10 0 0					
600	10	Do.	2 0 0	7 0 0					
1600*l.*	Sk.	Thornbury (Limited)	All.	5 0 0	10 0 0		7 0	Nil.	14
80	1	Do., new shares	1 0 0	4 0 0					
2000	5	Thorne	5 0 0	0 5 0			7 6	1 8	
160	10	Thrapston (Limited)	10 0 0	6 0 0			5 10	0 10	
	5	Ticehurst Cons. (Lim.)							
		Tideswell (L.) £2000							
18775*l.*	Sk.	*Todmorden* (Lim.)	All.	5 0 0	6 8 0	4 8	4 8	Nil.	18
1870	5	Do., B shares	3 0 0	7 10 0	4 10 0				
600	2½	Topsham (Limited)	2 10 0	6 0 0	2 15 0		7 6	Nil.	
		Torpoint (Limited)							
2180	10	*Torquay*	10 0 0	10 0 0	16 0 0	5 6	5 6	0 6	14
2320	10	Do.	5 0 0	7 0 0	6 0 0				
		Torrington, Devon.							
321	5	Totnes	5 0 0	5 0 0	5 0 0		7 0	0 9	
		Totnes Consumers							
5000	5	*Tottenham & Edm.*	5 0 0	8 0 0	6 0 0				
150	10	Towcester	10 0 0	5 0 0	10 0 0				
		Town-Malling							
300	5	Towyn (L.) Merion.	5 0 0		5 0 0				
	4½	Trecastle (Limited)							
275	10	Tring	10 0 0	7 10 0	12 0 0		6 8	0 10	14
		Trowbridge (British)							
320	25	Truro	25 0 0	10 0 0			5/3—5/8	0 4	13
320	5	Do., new	5 0 0	10 0 0					
320	7½	Do. do.	7 10 0	10 0 0					
8000*l.*	Sk.	*Tunbridge*	All.	7 10 0	50 p. ct.	5/ & 6/	5 0	Nil.	14
2000*l.*	Sk.	Do.	All.	5 0 0					
20000*l.*	Sk.	*Tunbridge Wells*	All.	10 0 0	19 0 0				
10000*l.*	Sk.	Do.	All.	7 10 0	14 0 0	6 0	5 0	0 6	14½
1000	10	Do., shares	2 0 0	7 10 0					
		Tunstall (British)							
	5	Turvey (Limited)							
100	10	Tuxford	10 0 0	5 0 0	12 0 0				
1500	1	Twyford (Limited)	1 0 0	Nil.			8 6	1 0	
34570*l.*	Sk.	*Tynemouth*	All.	10 0 0	150 0 0	4 0	4 0	Nil.	14·50
2000	10	Do.	10 0 0	7 0 0	11 0 0				
		Uckfield					7 6	0 10	
1480	5	*Ulverston*	5 0 0	7 0 0		6 0	5 10	0 10	18
3550*l.*	Sk.	Do.		10 0 0					
		Uppingham		0					
240	5	Upton-on-Severn	5 0 0	5 0	5 0 0				
2500	5	Upwell & Outwell							
400	5	Usk (Limited)	5 0 0	10 0 0	8 8 0				
300	10	Uttoxeter	10 0 0	6 0 0	12 10 0		5 5	0 5	14
1930	10	*Uxbridge & Hillingdn.*	10 0 0	7 10 0	12—12½	5 6	5 6	0 6	15
1500	20	*Ventnor*	12 0 0	6 10 0	15 0 0	5 10	5 10	Nil.	15
160	10	Wainfleet (Limited)	10 0 0		8 0 0			0 10	
1000	25	*Wakefield*	25 0 0	10 0 0	44 0 0				
3660	5	Do.	5 0 0	10 0 0	8 16 0				
1732	5	Do., new shares	5 0 0	7 10 0	6 15 0				
400	5	Walker & St. Ant.	5 0 0		7¾—8¼				
1900*l.*	Sk.	*Walker & Wall. Un.*	10 0 0	9 0 0	15 5 0	5 0	4 9	15 p.c.	14
380	Sk.	Do.	10 0 0	7 0 0	12 0 0				
300	10	Wallingford	10 0 0	5 0 0	8 0 0				
	10	*Waltham Abbey*							
3000	10	*Walton-on-Thames*	10 0 0	5 0 0	10 0 0	6 0	6 0	Nil.	14
	10	Walton-on-the-Naze Gas and Water							
200	10	Wantage	9 0 0	5 0 0	10 10 0				
3500	2	Ware (Limited)	2 0 0	0 7 0	2 0 0		6 6	0 6	
100	10	Wareham	10 0 0	3 10 0	8 0 0				
2000	1	Warkwth & Amble	1 0 0	3 10 0					
200	25	Warminster	25 0 0	6 0 0	28 0 0				
1800	20	*Warrington*	20 0 0	10 0 0	39 10 0	4 0	3/4—3/6	Nil.	18
3600	20	Do.	6 0 0	7 0 0	9 10 0				
		Warth							
300	50	*Warwick*	50 0 0	10 0 0	85 0 0		4/9—5/	0 6	16
		Watchet & W. £2500							
	2	Waterbeach (L.) £2000							
		Watford							
		Wedmore (Somerset)							
400	10	Weedon (Limited)	10 0 0	6 0 0	14 0 0		7 6	Nil.	
400	3	Do., new shares	1 10 0	6 0 0					
111	25	Wellington, Montgy.	25 0 0	6 0 0	27 0 0		5/6—6/8	Nil.	18
222	10	Do.	10 0 0	6 0 0					
498	25	Wellingborough	25 0 0	7 10 0			5 5	0 5	
1200	10	Wellington, Salop	10 0 0	7 10 0	10—11	5 0			
200	25	Wellington, Somer.	25 0 0	7 10 0	28 0 0		6 8	0 10	13
160	25	*Wells*, Somerset	25 0 0	6 0 0		5 0	5 0	Nil.	14
160	1210	Do., preference	12 10 0	5 0 0					
340	10	Do., new	8 10 6	6 0 0					
		Wem (Limited) £2000							
	5	Wendover (Lim.)							
		West Auckland &c (L)							
500	10	Westbury (Limited)	10 0 0	5 15 0	10 0 0				
		West Cowes							
225	10	Westerham (Limited)	10 0 0	5 0 0	11 0 0		8 10		
209	5	*Westhoughton* (L.)	2 10 0						
5000	10	*West Kent*	10 0 0	5 0 0	10 5 0	5 6	5 6		14
454	5	West Malling G. & W.	5 0 0	3 0 0	4 10 0				
200	20	*Weston-s.-Mare*, A sh	20 0 0	10 0 0	40 0 0	6 0	5 0	Nil.	12—13
200	20	Do., B shares	20 0 0	7 10 0	28 0 0				
800	20	Do., C shares	15 0 0	7 10 0	18 0 0				
200	5	Wetherby	5 0 0		1 10 0				
3000	10	*Weymouth Cons.*	10 0 0	4 10 0	10 0 0	5 3	5 3	0 9	14
		Whaley Bridge							
1300	10	*Whitby*	10 0 0	10 0 0	20 0 0				
323	10	Do.	10 0 0	7 0 0	14 0 0				
1177	10	Do.	2 0 0	7 0 0					
2300	1	Whitchurch, Hants	0 10 0	5 0 0					
450	10	Do., & Doddington	10 0 0	10 0 0	17 0 0	6 8	6 8	0 10	14
400	20	Whitehaven	20 0 0	8 0 0	34 0 0		4 7	0 5	16
400	5	Do., new shares	5 0 0	8 0 0	9 0 0				
		Whitehaven New							
		Whitstable							
		Whittington							
250	10	Whittlesea	10 0 0	5 0 0	11 0 0				
300	10	Whitwick & Coalville	10 0 0		10 0 0				
2400	5	*Whitworth Vale*	5 0 0	10 0 0	8 5 0	6 0	5 6	0 6	17
1164	5	Do., new shares	2 10 0	7 10 0	3 10 0				
	5	Wickam. M. (L.) £1000							
		Widnes Gas & Water.							
1250	10	*Wigan*	10 0 0	10 0 0	20 0 0		3 10	0 4	
1250	10	Do., preference	10 0 0	5 0 0	10 0 0				
2500	10	Do., new shares	5 0 0	7 10 0	8 15 0				
450	5	Wigston	5 0 0	5 0 0	5 0 0		6 8	1 3	
170	1	Do.	1 0 0	5 0 0	1 0 0				
		Wigton, Cumberland							
1020	5	*Willenhall*, A shares	5 0 0	10 0 0		6 0	3/6—4/2	0 3	15·58
1020	54s.	Do., B shares	2 14 0	3 0 0					
510	5	Do., new C shares	5 0 0	7 10 0					
918	5	Do., do.	4 15 0	7 10 0					
2000	10	*Wilmslow*	10 0 0	6 0 0	14 0 0	5 0	5 10		18
		Wilton							

No. of Shares Issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
	10	Wimborne Minster	10 0 0						
	10	Wincanton	10 0 0	7 0 0			8 4	3 4	
		Winchcombe . £1500							
1850	25	*Winchester Gas & W. Windermere District.*	25 0 0	7 0 0	25 0 0	5 0	5 0	Nil.	14
1200	20	*Windsor* (Limited)	20 0 0	10 0 0	30 0 0				
1200	8	Do., pref. shares	8 0 0	5 0 0	8 0 0				
130	20	Do.	20 0 0	7 0 0	23 0 0	5 6	5 0		14
300	20	Do.	5 0 0	7 0 0					
141	10	Winslow	10 0 0	6 0 0	10 0 0				
120	10	Winterton (Limited)	10 0 0	5 0 0					
120	5	Do., new shares	5 0 0	5 0 0					
200	10	Wirksworth	10 0 0	5 0 0	10 0 0				
		Wisbeach					5 10		
300	10	Witham	9 0 0				7 6	1 8	
		Withersea (Limited)							
3500	10	Witney	10 0 0	5 0 0	8 5 0		7 8	1 0	
1400	10	Do., pref.	10 0 0	6 0 0	10 0 0				
400	5	Wivelliscombe (Lim.)	5 0 0	6 10 0			6 3	0 10	
400	5	Do.	1 5 0						
		Wivenhoe (L.), £2000							
200	10	Woburn	10 0 0	5 0 0	11 0 0				
		Woking							
210	10	Wokingham	10 0 0	5 0 0					
98960	Sk.	*Wolverhampton*	100 0 0	10 0 0	200 0 0		2 9	Nil.	15
550	10	Woodbridge (Lim.)	10 0 0	6 0 0			6 8	0 10	14
660	2½	Woodstock	2 10 0	5 0 0			7 6	0 10	
		Woodhouses							
200	7	Wooler	7 0 0		7 0 0		12 3	1 3	
6000	Sk.	*Woolton*	Stock	10 0 0	150 0 0				
2400	5	*Woolwich Consumers*	5 0 0	10 0 0	8 0 0				
2400	5	Do., do.	5 0 0	7 10 0	7 0 0				
4800	5	Do., do.	3 0 0	7 10 0	4 0 0				
1800	10	*Woolwich Equitable*	10 0 0	10 0 0	15 0 0	5 9	4 9	0 7	15
409	5	Wootton Bassett, Lim.	5 0 0	5 0 0	5 0 0		7 7	0 11	
2500	10	*Worcester*	10 0 0	10 0 0	22 10 0	4 0	4 0	6d–9d	13½
		Workington							
800	10	*Worksop*	10 0 0	8 0 0	14 10 0	6 0	4 0	Nil.	14
640	5	Do., new shares	5 0 0	7 0 0	7 0 0				
160	5	Do.	5 0 0	6 0 0					
650	10	*Worthing*	10 0 0	6 0 0	10—10½				
		Worsboroughdale & Worsborough							
267	12	Wotton-under-Edge	12 0 0	5 0 0	12 0 0		6 0	1 0	13—14
12000	Sk.	*Wrexham*	Stock	10 0 0	150 0 0	4/—5/	4/8—5/8	0 8	15
1380	10	Do.	10 0 0	7 0 0	10 10 0				
500	10	Do.	5 0 0	7 0 0	5 10 0				
		Writtle							
		Wye, Kent							
		Wylam							
400	20	Wymondham	5 0 0	5 0 0	5 0 0				
		Yarmouth, Isle of Wight							
800	30	*Yarmouth, Norfolk*	30 0 0	8 10 0		5 0	5 0	0 10	12
800	7½	Do., ½ shares	7 10 0	8 10 0					
1000	30	Do.	30 0 0	7 10 0					
	5	Yatton Consumers (L)							
1675	4	*Yeadon & Guiseley*	4 0 0	5 0 0	4 8 0				
1675	2	Do., new shares	0 5 0	5 0 0	0 5 6				
280	30	Yeovil	30 0 0	10 0 0	45 0 0		5 0	0 10	14
280	10	Do.	10 0 0	10 0 0	14—15				
15000	5	*York United*	5 0 0	10 0 0	11 0 0	Nil.	3 4	0 10	15½
5000	5	Do.	4 0 0	10 0 0	9 0 0				
		Yoxford							
	5	Ystalyfera (L.) . £4000							
	10	*Ystrad Gas & W.*	2 0 0						
	5	Ystrad Rhondda (L.)							
		SCOTLAND.							
700	1	Aberlady					10 10		
		Abernethy							
		Aberlour (L.) . £650							
500	10	Airdrie	10 0 0	9 0 0	14 10 0		5 0		
		Alexandria					7 1		
750	10	Alloa	10 0 0	10 0 0	20 0 0		6 8	1 3	28
250	10	Do.	5 0 0	10 0 0					
		Alva, near Stirling					7 0		
500	5	Alyth	5 0 0	Nil.	7 1 0		9 2	2 6	28
600	7	Annan	7 0 0	7 0 0	7 5 0		6 3	1 3	20
2000	1	Anstruther & Cellardyke	1 0 0	8 0 0	1 0 0		8 4	2 1	28—30
125	20	Ardrossan	20 0 0	6 0 0	22 0 0		6 8	1 8	24
658	1	Auchinleck	1 0 0						
381	5	Auchterarder	5 0 0	7 10 0	7 10 0		8 9		
750	2	Auchtermuchty	2 0 0	6 0 0	2 10 0				
3332	5	Ayr	5 0 0	6 0 0	6 10 0		7 6	1 8	28—30
		Ayr Newton					7 11		
		Balfron					10 0		
		Banchory					12 11		
300	10	Banff	10 0 0	6 0 0	11 0 0				
3700	1	Barrhead	1 0 0	7 0 0	1 10 0		7 6	1 8	27
200	5	Bathgate	5 0 0	5 0 0	5 0 0				
		Beith					7 6		
976	1	Bervie	1 0 0	5 0 0			12 0		
		Biggar							
739	5	Blairgowrie	5 0 0	8 0 0	7 0 0		8 4		
		Blantyre (Limited)					8 4		
400	6	Borrowstowness	6 0 0	5 0 0	7 5 0		6 8	0 10	24
5560	1	Bothwell (Limited)	1 0 0	7 10 0	1 10 0				
540	5	Brechin	5 0 0	11 0 0	14 0 0		6 8		
		Bridge of Allan					7 6		
		Bridge of Weir					9 2	1 3	
		Callender							
		Cambuslang					7 1		
		Campbelton					9 2	1 8	
		Carluke, Lanark					8 4	0 10	
250	4	Carnoustie	4 0 0	7 10 0	4 0 0				
300	5	Castle Douglas	5 0 0	7 0 0	5 0 0		10 0	Nil.	30
		Catrine					8 4		
2530	3	Coatbridge	3 0 0	10 0 0	5 0 0		6 3		
200	5	Coldstream	5 0 0	6 0 0	6 10 0		10 0	3 4	29
		Collinsburgh							
973	1½	Comrie	1 10 0	Nil.			11 8	Nil.	25
		Corstorphine					9 2		
733	1	Crail, Fife	1 0 0	5 0 0	1 0 0		10 0	Nil.	32½
2744	1	Crieff	1 0 0	10 0 0	1 15 0		9 2	1 8	
600	1	Cullen	1 0 0	5 0 0	0 15 0		12 6		
280	2½	Cumbernauld	2 10 0	5 0 0	2 10 0				
200	5	Cumnock	5 0 0	10 0 0	10 0 0		7 6	0 10	27
600	5	Cupar Angus	5 0 0	7 10 0	7—7½		11 3	2 1	25
250	25	Cupar Fife	25 0 0	5 0 0	25 0 0		6 8	1 8	28—31
300	10	Dalkeith	10 0 0	10 0 0	20 0 0		5 10		
		Dalry, Ayr					5 10		
		Darvel					8 4		
		Deanston					7 6		

No. of Shares Issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
750	2	Denny	2 0 0	5 0 0	2 0 0		8 9	3 4	28
		Dingwall					13 8		
	5	Dornoch							
500	1	Douglas	1 0 0	6 0 0	1 2 0		10 0		
		Dufftown		6			13 4		
12000	Sk.	Dumfries	Stock	10 0 0	150 0 0		2/6—3/4	2/6-3/4	28
391	5	Dunbar	5 0 0	6 0 0	5 10 0		9 2	1 6	
		Dunblane						1 10	
848	10	Dunfermline	10 0 0	11 5 0	21 0 0		5 5	1 3	28·5
297½	17½	Do. new shares	17 10 0	6 10 0	19 0 0				
		Dunkeld							
3000	2	Dunoon	2 0 0	7 10 0	2 0 0		7 6	0 5	20
		Dunse							
250	5	Dysart	5 0 0	7 10 0	6 10 0				
		Eaglesham					9 2		
		East Linton					11 8		
2327	1	East Wemyss	1 0 0	6 0 0	1 2 0				
750	1	Ecclefechan	1 0 0						
6600	25	*Edinburgh*	25 0 0	10 0 0	52 0 0	None	6 0	0 7	30
6000	25	*Edinburgh & Leith*	25 0 0	8 0 0	34 15 0		6 0	0 7	
		Ellie					10 0		
		Ellon					15 0		
621	12	Elgin	12 0 0	6 0 0	13 0 0				
1300	1	Ellie & Earlsferry	1 0 0	7 5 0	1 3 0				
		Ellon							
		Errol							
		Eyemouth							
300	10	Falkirk	10 0 0	6 5 0	10 0 0		7 6	0 10	28
		Falkirk, New							
632	2	Falkland	2 0 0	5 0 0	2 0 0				
		Fettercairn					15 0		
2000	1	Ferry Port on Craig	1 0 0	5 0 0	1 0 0		9 2	1 8	28—30
581	1	Fochabers	1 0 0	5 0 0	1 0 0		11 8	Nil.	
		Forres					10 0		
		Fortrose					14 0		
		Fort William							
2000	16s.	Fraserburgh	0 16 0	7 10 0	0 16 0		10 0	1 8	30
1800	5	Galashiels	3 0 0	7 10 0	10 0 0		6 3	1 3	30
		Gatehouse, near Fleet					11 8		
1238½	2½	Girvan	2 10 0	4 0 0	2 10 0		8 4	2 6	24
		Gourock					7 6		
		Grahamston							
190	10	Grangemouth	10 0 0	5 0 0	10 0 0		7 6	0 10	
400	6½	Haddington	10 0 0	8 0 0			8 4	0 10	
400	1½	Do., A.							
400	1½	Do., B.							
	5	*Hamilton, New*	5 0 0	4 10 0	6 0 0				
1480	5	Hawick	5 0 0	10 0 0	9 0 0		7 1		
300	5	Helensburgh	5 0 0	7 10 0	7 10 0		7 6		
2000	2	Holyrood (Limited)	2 0 0	7 10 0	3 0 0		7 6		
1312	1	Huntly	1 0 0	7 10 0	1 5 0				
268	2	Innellan (Limited)							
217	5	Inverary	5 0 0	Nil.	5 0 0		13 4	2 6	26
		Invergordon					15 0		
800	1	Inverkeithing (L.)	1 0 0	2 10 0	1 0 0		10 0	1 8	26
800	1	Inverkip (Limited)	0 10 0					2 6	25
1200	10	*Inverness Gas & W.*	10 0 0	7 10 0	13 0 0		10 0		
2400	5	Do., new shares	5 0 0	7 10 0	6 10 0				
		Inverury					10 0	0 8	
	10	Irvine	10 0 0	10 0 0	14 0 0		7 6		
	2½	Do.	2 10 0	10 0 0	3 12 6				
600	5	Jedburgh	5 0 0	10 0 0	7 0 0		8 9	1 3	
		Johnstone, Paisley					7 3	1 3	
		Kamesburgh (Lim.)					7 11		
3000	1	Keith	1 0 0	5 0 0	1 0 0		10 0	2 6	27
400	5	Kelso	5 0 0	10 0 0	10 10 0		7 6	1 8	30
400	5	Do.	2 10 0	10 0 0	5 5 0				
950	1	Kennoway	1 0 0	5 0 0	1 0 0				
1515	1	Kettle Freuchie, &c.	1 0 0	5 0 0	1 0 0		9 2	0 2	29
		Kilmalcolm					10 6		
600	2	Kilsyth	2 0 0	5 0 0	2 0 0		6 9	0 5	25
		Kilwinning					6 8		
334	5	Kincardine	5 0 0	5 0 0	4 10 0		8 4		
		Kinghorn							
		Kingskettle, Fife							
		Kinross					8 4		
1610	10	Kirkcaldy	10 0 0	7 10 0	15 0 0		6 8	2 3½	28
320	8	Kircudbright	8 0 0	2 10 0	8 0 0		10 0	1 3	27
1200	5	Kirkintilloch	5 0 0	8 10 0	7 15 0		6 8	0 10	
		Kirkwall					10 0		
		Kirriemuir					10 0	2 1	
		Ladybank					8 4		
		Lanark							
2500	1	LanarkConsumers(L)	1 0 0	3 0 0	0 13 0		8 4	3 4	26
		Langbank					10 6		
		Langholm					7 6		
		Largo, near Leven					7 11	0 8	
280	8	Largs	8 0 0	7 10 0	8 10 0		8 4		
1365	1	Lasswade	1 0 0	10 0 0	1 10 0		7 6	Nil.	28
177	5	Lauder	5 0 0	5 0 0	3 10 0		11 8	1 8	30
		Laurencekirk					10 0		
		Lennoxtown					6 3		
		Lerwick					12 11		
1879	1	Leslie, Fife	1 0 0	7 10 0	1 10 0		8 4	2 6	30
618	1	Lesmahago	1 0 0	6 0 0	1 0 0				
		Leuchars					9 2		
1800	1	Leven	1 0 0	7 10 0			7 6	0 10	
100	10	Linlithgow	10 0 0	10 0 0	19 0 0		6 8		
		Linton							
		Lochee, near Dundee							
520	5	Lochgilphead (Lim.)	5 0 0	6 0 0			11 8	1 8	27
		Lochmaben					8 9		
400	5	Lochwinnoch	5 0 0	5 0 0	2 10 0		8 4	Nil.	28
240	5	Lockerbie (Limited)	5 0 0	7 10 0	7 10 0		9 2	1 8	27
240	1	Do.	1 0 0	7 10 0	1 10 0				
		Macduff					8 4	0 10	
1200	1	Markinch, Paisley	1 0 0	7 10 0					
		Maryhill, nr. Glasgow							
282	3	Mauchline	3 0 0	5 0 0	3 0 0				
667	5	Maxwell Town & Dumfries	5 0 0	5 0 0	3—3½				
568	5	Maybole, Ayrshire	5 0 0	6 0 0	6 0 0		9 2	2 6	
		Meigle (Lim.) . £700					15 0		
373	2	Melrose	2 0 0	7 10 0	2 10 0		7 11		
718	2	Mid & East Calder	2 0 0		2 0 0		10 0		
		Milngavie					7 11		
200	5	Moffat	5 0 0	5 0 0			9 2		
120	2½	Do., new shares	2 10 0	5 0 0					
400	20	Montrose	20 0 0	10 0 0	34 0 0		7 1	0 10	
		Motherwell					5 10		
		Muirkirk (L.) . £1000					7 6		
1000	5	Musselburgh	5 0 0	3 0 0	9 9 0		6 8		
618	1	Nairn	1 0 0	5 0 0	1 0 0				
		Neilston, n. Glasgow							
300	5	Newburgh, Fife	5 0 0	8 0 0	7 0 0				
300	1	Do., new shares	1 0 0	8 0 0					

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
		New Cumnock					10 0		
1200	1	Newmilns	1 0 0	7 10 0	1 2 0		5 0		
		New Pitsligo					15 0		
		Newport, near Dundee							
1300	1	Newport, Fife	1 0 0	5 0 0	1 1 0		9 2		
		Newton-on-Ayre							
107	14½	Newton Stewart	14 10 0	5 0 0	14 10 0				
300	5	N. Berwick, N.B.	5 0 0	5 0 0	7 10 0		10 0		
		North Queensferry							
		Oban	5 0 0	7 10 0	5 7 6				
		Old Cumnock					7 6		
		Old Kilpatrick					10 0		
		Old Meldrum					13 9		
26,000	5	Partick, Hillhead, & Maryhill (Lim.)	3 10 0	5 10 0	5 0 0		5 0	1 0	29
3400	Stk.	Peebles	5 0 0	4 0 0	5 0 0		7 6	1 8	30
1000	5	Peterhead							
500	2½	Pettenween	1 0 0	6 0 0	1 1 0		8 4		
		Pollokshaws	1 0 0	7 10 0	1 5 0		5 0	0 10	
2418	1	Portobello					6 8		
		Portsoy							
200	5	Prestonpans	5 0 0	6 0 0			8 4		
1600	1	Renton, Dumbarton	1 0 0	7 10 0	1 3 6		6 3	Nil.	24
		Rothes							
424	12	St. Andrew's	12 0 0	10 0 0	20 0 0		7 1	1 3	26—30
400	5	Saltcoats	5 0 0	10 0 0	9 0 0		6 8	0 10	
936	1	Sanquhar	1 0 0	5 0 0	0 15 0		10 0		
30	1	Do., preference	1 0 0	5 0 0					
907	5	Selkirk	5 0 0	10 0 0	11 2 6		6 8	1 8	30
	2	Slamannan (Limited)							
518	1	South Queensferry	1 0 0	7 10 0	1 2 6		10 0	2 6	28
800	2	Stevenston	2 0 0	5 0 0	2 0 0		7 6		
200	5	Stewarton	5 0 0	10 0 0	6 5 0		6 8	2 1	
7500	2	Stirling	2 0 0	10 0 0	4 0 0		6 8	1 8	30
2500	1½	Stonehaven	1 0 0	10 0 0	2 0 0		7 6	1 4	28
1116	1	Stonehouse	1 0 0	7 10 0	13s—15s				
600	2½	Stornoway	2 10 0	8 0 0	3 10 0		12 1		
		Stow (Limited)					10 0		
600	5	Stranraer	5 0 0	6 0 0	6—6½		7 6	2 1	27
588	2	Strathaven	2 0 0	8 0 0	3 0 0		7 11		
		Stromness					7 10		
		Tain					12 0		
		Thornhill					10 0		
643	2½	Thurso	2 10 0		2 10 0		7 6		
		Tillicoultry					7 6		
		Turriff							
800	1	Tranent	1 0 0	5 0 0	1 0 0		10 0		
		Troon					7 6		
		Tullibody							
2651	1	Wemyss & Buckhvn.	1 0 0	6 0 0	1 0 0				
		West Calder (Lim.)							
		Whitburn					7 6		
		Wick					9 2		
665	5	Wigtown	5 0 0				10 10		
		IRELAND.							
1800	1	Antrim (Limited)	1 0 0	5 0 0	1 0 0		8 4	0 10	
		Ardee		10 0 0	20 0 0				
300	10	Armagh (Limited)	10 0 0	10 0 0	16 0 0				
300	10	Do.	7 0 0	6 0 0	5 0 0				
500	5	Athy (Limited)	4 10 0	6 0 0	4 10 0		9 2	1 8	
		Balbriggan £1400							
		Ballabay							
		Ballyeastle							
1200	7½	Ballymena & Harryville (Limited)	7 10 0	5 0 0	7 12 6				
184	10	Ballymoney	10 0 0	5 0 0	10 0 0				
220	5	Ballynahinch (Lim.)	5 0 0	5 0 0	5 0 0				
		Ballyshannon £2000							
		Bangor, Down							
5250	20	*Belfast*	20 0 0	10 0 0	39 0 0				
2450	20	Do., new shares	20 0 0	10 0 0	35—37				
		Boyle (Limited)							
1047	5	Carlow	5 0 0	5 0 0	5 0 0				

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.	Parliamentary Maximum Price.	Present Price of Gas.	Advance in Price in 1873.	Average of Illuminating Power.
	£		£ s d	£ s d	£ s d	s. d.	s. d.	s. d.	Cndls.
600	5	Carrickfergus (Lim.)	5 0 0	10 0 0	7 10 0		7 1	0 10	14·20
200	10	Carrickmacross (Lim.)	10 0 0	6 0 0	9 0 0				
279	10	Carrick-on-Suir	10 0 0	Nil.			7 6	0 9	12
228	10	Castleblaney (Lim.)	10 0 0	5 0 0	10 0 0				
		Castlederg							
400	5	Cavan (Limited)	5 0 0		5 0 0				
		Clones (Lim.) £2000							
2000	5	Clonmel Consumers	5 0 0	6 0 0	5 10 0				
240	5	Comber (Limited)	5 0 0	5 0 0	5 0 0				
500	5	Cookstown	5 0 0	8 0 0	7 0 0		9 2	0 10	
		Coote Hill				5/3			
18000	5	*Cork Consumers* (L.)	5 0 0	8 0 0	8 0 0	5/9			
6000	5	Do., new shares	4 0 0	8 0 0	7 0 0				
		Donaghadee £2000							
608	11	Drogheda	11 0 0	7 0 0	14 10 0				
420	5½	Do., new shares	5 10 0	7 0 0	7 5 0				
59000	10	*Dublin Alliance*, Ash.	10 0 0	Nil.	9 0 0	5 6	5 6	Nil.	20
440	25	Dundalk (Limited)	25 0 0	6 0 0	30 0 0		6 8	0 10	16—18
600	5	Dungannon	5 0 0	5 0 0	5 5 0		9 2	Nil.	22
371	5	*Downpatrick*	5 0 0	4 0 0	4 0 0				
250	10	Ennis (Limited)	10 0 0	10 0 0	13 0 0		9 2	1 8	16
240	25	Galway	25 0 0	10 0 0	35 0 0				
		Gorey (Lim.) £2000							
		Holywood (Limited)							
	10	Howth (L.) £35 0							
		Keady							
600	10	Kilkenny (Limited)	10 0 0	9 0 0	12 10 0				
		Killarney (L.) £3000							
		Kilrush							
		Kinsale (L.) £2000							
9000	4	Limerick (Unit. Gen.)	4 0 0	2 10 0	1 17 6				
210	10	Larne (Limited)	10 0 0	6 0 0	10 0 0		6 8	Nil.	
150	10	Letterkenny (Lim.)	10 0 0	6 0 0	13 0 0		7 6		22
600	15	Lisburn (Limited)	12 0 0	8 6 8	14 10 0		5 10	0 10	16
300	5	Lismore	5 0 0	3 0 0					
100	5	Do., preference	3 0 0	5 0 0					
1200	27½	Londonderry	27 10 0	6 5 0	40 10 0		6 8	Nil.	18
1000	3	Longford	3 0 0	5 0 0	3 0 0		9 2	1 8	14—16
520	10	Lurgan	10 0 0	5 0 0			6 8	0 10	14—15
	1	Maghera (Limited)							
		Magherafelt (Lim.)							
		Mallow							
2191	1	Maryborough (Lim.)	0 5 0		0 5 0				
		Midleton							
770	5	Monaghan (Limited)	5 0 0	4 10 0	5 16 0				
2000	10	Navan	5 0 0	6 0 0	4 0 0				
		Nenagh							
1000	5	New Ross	3 10 0	7 0 0	5 5 0		7 1	1 3	20
2000	5	Newry Conrs. (Lim.)	5 0 0	5 0 0	5 0 0		6 8	0 10	17
1000	5	Do.	4 0 0	5 0 0					
450	5	Newtownards	5 0 0	7 0 0	6 5 0				
240	10	Newtownlimavady	10 0 0	Nil.	10 0 0		9 2	1 8	
1000	5	Omagh	5 0 0	8 0 0	7 10 0		7 6	0 10	18
414	5	Parsonstown (Lim.)	5 0 0						
250	20	Portadown	20 0 0	2 10 0	15 0 0		7 6	1 8	16
125	20	Portaferry							
300	5	Portrush	5 0 0	Nil.	5 0 0	8 4	8 4	Nil.	14
700	10	Queenstown	10 0 0	6 0 0	11 0 0				
		Randalstown (Lim.)							
		Rathkeale (Limited)							
		Roscommon £2500							
	5	Roscrea (L.) £2500							
		Saintfield (L.) £1000							
600	5	Skibbereen (Lim.)	5 0 0	Nil.			7 6	Nil.	13
600	10	Sligo	10 0 0	8 0 0	15 0 0	10 10	7 6	1 8	17½
600	5	Do., new shares	5 0 0	8 0 0	7 10 0				
		Tandragee (Limited)							
	5	Thurles (L.) £2500							
		Tuam (Lim.) £3000							
540	5	Tullamore	5 0 0	5 0 0	5 0 0		10 0	1 8	16
240	5	Tullow	5 0 0	6 0 0	5 0 0				
		Warrenpoint £3000							
1600	10	*Waterford*	10 0 0	6 0 0	12 0 0				
1200	5	Wexford Consumers	5 0 0	10 0 0	8 0 0				
300	10	Wicklow (Lim.)	10 0 0	6 0 0	10 0 0				

GAS-WORKS BELONGING TO LOCAL BOARDS, MUNICIPAL CORPORATIONS, OR COMMISSIONERS,

Acting under Special Acts of Parliament.

	Parliamentary Maximum Price.	Present Price of Gas.	What Advance in Price (if any) was made in 1873.	Average of Illuminating Power.
	s. d.	s. d.	s. d.	
Aberavon				
Aberdeen	None.	5 0	Nil.	30
Abergavenny	5 0	4 6	Nil.	14
Arbroath	5 10	5 10	0 5	28
Atherton				
Athlone				
Ayr		7 6		28·92
Ballinasloe		9 2	0 10	
Barrow-in-Furness		5 0	Nil.	19
Bethesda, Bangor				
Beverley		4 2	1 3	
Bingley	4 6	4 6	0 4	16
Birstal				
Birkenhead		4 6	0 4	
Blackpool, & Layton with Warbk.	None.	5½10	Nil.	18
Bollington (Cheshire)				
Bolton	4 0	3 4	Nil.	19
Bradford (Yorkshire)		3 6	0 6	
Brighouse	None.	3 9	Nil.	15½
Briton Ferry				
Broughty Ferry		6 8	0 10	30
*Burnley				
Burton-on-Trent		4 0	1 0	
Bury (Lancashire)				
Buxton	6 0	5 0	1 0	18
Carlisle		3 6	0 6	18
Cashel				
Chorley				
Cleckheaton	4 6	4 6		14
Coleraine	None.	7 6	1 8	15
Congleton				
Dalton				
Darlington	5 0	3 8	0 4	16
Devizes				
Dewsbury and Batley	4 6	4 6	0 3	16½
Doncaster		4 2	0 5	16—18
Dumbarton	6 0	6 0	1 6	27
Dundee	None.	6 0	1 10	28
Enniskillen				
Forfar	None.	7 1	2 1	27
*Glasgow	6 0	5 5	0 10	
Great Malvern				
Greenock		5 0	0 10	
Halifax		4 0	0 4	
Hamilton		5 10	1 8	29·15
Haverfordwest				
Haworth		5 0		
Hereford	6 0	4 0	0 5	13
Heywood			Nil.	
Highbridge				
Hindley				
Huddersfield		4 0	3d. & 3d.	
Kells		6 8		14—16
Keighley	5 0	4 2	Nil.	15—16
Kilmarnock		5 10	0 2	28½
Knaresborough				
Leeds		3 9	0 3	17½
Leek		6 0	4 3	14
Limerick (Corp. Wrks.)			Nil.	
Lytham (Lancashire)				
Lymm				
Macclesfield		4 0	4 0	Nil.
Malvern		6 0	4 6	Nil.
Manchester			3 8	0 4
Maryport				
Middlesborough		None.	4 3	0 5
Middleton				
Milton (Kent)			6 8	1 0
Nelson (Burnley)			5 0	4 9
Newton (Lancashire)				
Oldham				4 6
Oswaldthwistle				
Over Darwen				
*Paisley		6 0	5 0	1 3
Perth		None.	7 6	1 8
Port Glasgow			5 0	
Renfrew				
Richmond (Yorkshire)			5 0	0 10
Ripon				
Rochdale		5 0	4 3	0 6
Rotherham				
Rothesay			5 10	1 3
Rutherglen			6 8	
St. Mary Church		5 6	5 6	0 6
Salford				
Southport		4 0	4 0	Nil.
Sowerby Bridge		4 2	4 2	Nil.
Spalding		6 0	5 10	0 10
Stockport			4 4	0 4
Stockton-on-Tees		5 0	3 9	0 9
Strabane				
Teignmouth				
Tenby			5 6	0 6
Tralee				
Trim (Meath)				
Tyldesley & Shakerley				
Wallasey		5 6	4 0	Nil.
Walsall			2 1	Nil.
Wells (Norfolk)				
Widnes		5 0	4 0	Nil.
Workington				
Youghall			6 0	1 3

GAS-WORKS BELONGING TO PRIVATE INDIVIDUALS.

Those marked * by the purchase of the shares in extinct companies.

Ballina.	Camborne.	Eccleshill, near	Halstead.	Milnrow, nr. Man-	Penryn.	St. Neots*.
Baillieston.	Carnarvon.	Leeds.	Harleston.	chester.	Pontypool.	Seaham.
Beaufort (Brecon).	Chapel-en-le-Frith.	Elles near.	Hayle.	Mold Green, nr.	Redditch.	Sittingbourne.
Beaumaris.	Chard.	Enniscorthy.	Holt.	Huddersfield.	Rhosllanerchrugog.	Southall (Midlsex).
Berkeley.	Clare (Suffolk).	Enniskillen.	Hunmanby.	Nantwich*.	Ripon.	Stokesley.
Billericay.	Crewe.	Farsley.	King's Langley.	Nettlebed.	Ross.	Stowmarket.
Bodmin.	Colyton.	Fermoy.	Leiston (Suffolk).	New Ross.	Rhyl.	Tipperary.
Broadbottom.	Dereham.	Ferry Hill.	Lilleshall (Salop).	Oakham*.	St. Blazey (Cornwall).	Tiverton*.
Bungay.	Earlston.	Goole.	Mullingar*.	Parsonstown.	St. Ives* (Hunts).	Watlington.
Burntisland.	Ebbw Vale.	Hadleigh.				Whitchurch (Salop).

The GRAND MEDAL of MERIT at the VIENNA EXHIBITION has been AWARDED to

GWYNNE & BEALE'S PATENT IMPROVED GAS-EXHAUSTERS,

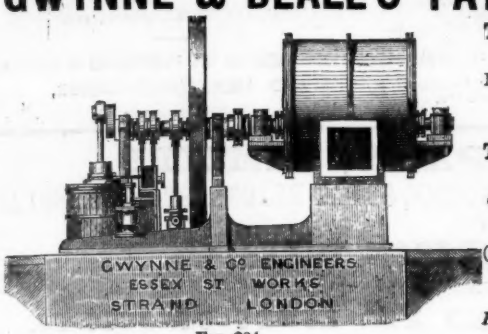


FIG. 224.

The BEST EXHAUSTERS IN THE WORLD.

Made under the personal superintendence of

Mr. BEALE,

The oldest Maker, Inventor and Patentee of

GAS-EXHAUSTING MACHINERY.

(It is NOT CORRECT to state that Mr. BEALE has RETIRED.)

Prices and every information on application.

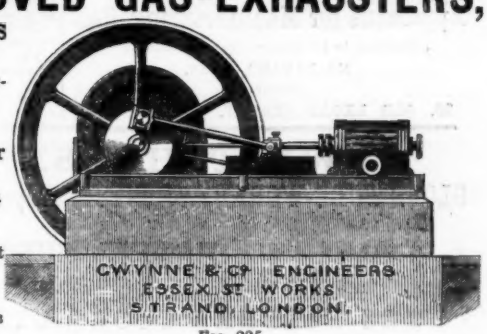


FIG. 225.

Fig. 224 represents one of those erected at the Imperial Gas-Works, Bromley, capable of passing 210,000 cubic feet of gas per hour. Several others of the same size are now on order for the same Company. These Patent Machines combine the highest quality of workmanship and materials, the largest bearings and wearing surfaces, with the **most perfect system of action yet discovered.** Fig. 225 represents one of a series of four at the Nottingham Gas-Works, each passing 52,500 cubic feet per hour. GWYNNE AND Co. *do not pretend to enter into a struggle with other makers in respect to cheapness. They have never sought to make price the chief consideration, but to produce Machinery of the very highest quality, and the most approved design and arrangement.* Their prices have been estimated with a due regard to the **excellence of the article produced,** and when this is taken into consideration, they have no fear for the result. The orders executed this season for Exhausters and alterations to their patented system amount to over 4,000,000 cubic feet of gas passed per hour, and to over 300 horse power for Engines to drive them. In every instance their work is giving the greatest satisfaction. Numerous testimonials and references can be given.

REGULATORS, BYE-PASSES, STOP-VALVES, GAS-VALVES, & MACHINERY FOR GAS MANUFACTURE, OF ALL SIZES,

CAN BE HAD ON APPLICATION TO

GWYNNE & CO., HYDRAULIC & GAS ENGINEERS, ESSEX STREET WORKS, STRAND, LONDON, W.C.

G. & Co. are now manufacturing for a London Gas Company three of their 210,000 *cubic feet Patent Gas Exhausters, and many of all sizes.*

AN ANALYSIS OF THE
METROPOLITAN GAS COMPANIES ACCOUNTS
FOR THE YEARS 1869, 1870, and 1871,

COMPILED AND ARRANGED BY JOHN FIELD,

Chief Accountant to the Imperial Gas Company.

CAN BE OBTAINED FROM THE AUTHOR AT

26, Arundel Square, Islington, N., per post; of Eden Fisher, Stationer, 50, Lombard Street, E.C.; or of W. B. King, at the Office of the "Journal of Gas Lighting." Price £1 1s.

A few Copies of the Analysis of 1872 *still on hand. Price* 10*s.* 6*d.*

Now ready, price 1s. 6d., post free.

THE GAS CONSUMER'S MANUAL;
OR,

HOW TO OBTAIN GOOD LIGHT AND CHEAP GAS.

Being a Popular Exposition of the Chemistry of Gas Lighting, with Practical Instructions in the best methods of burning Gas for Lighting, Cooking, and Heating; and Suggestions as to the proper Sizes of Interior Pipes, Arrangement of Lights, &c., &c.

ILLUSTRATED.

By E. S. CATHELS, ASSOC. INST. C.E., MONTREAL, CANADA.

London: WILLIAM B. KING, 11, BOLT COURT, FLEET STREET, E.C.

JUST PUBLISHED, a revised and illustrated Reprint, with additions, of the Paper on

RETORT SETTING AND WORKING,
READ AT THE

MEETING OF THE BRITISH ASSOCIATION OF GAS MANAGERS IN 1870,

By E. S. CATHELS, Assoc. Inst. C.E.

To be had of Mr. W. B. KING, 11, BOLT COURT, FLEET STREET, LONDON, E.C.

Price 2*s.* 6*d., post free.*

"The first paper read was on the 'Setting and Working of Retorts,' by Mr. E. S. Cathels, of the Crystal Palace District Gas-Works. This was an exhaustive, and, to gas managers, an invaluable paper on the apparatus used in one of the most important processes in the manufacture of gas. It is a subject to which the author is well known to have given special attention, and we therefore commend his paper to the careful notice of those of our readers who are interested in the production of gas."—*From a Leading Article in "Engineering," on June* 10, 1870.

RETORT-SETTINGS.
MR. CATHELS
IS PREPARED TO SUPPLY

TRACINGS OF DETAILED WORKING DRAWINGS
OF HIS

IMPROVED RETORT-SETTINGS

(FROM 1 TO 9 RETORTS IN A BED),

ADAPTED FOR EITHER COKE OR TAR AS FUEL,

Showing Plans, Transverse and Longitudinal Sections, and Elevations; easily understood by any retort-setter or bricklayer. These Settings are excellent gas producers, with great economy in fuel.

For terms, &c., apply to E. S. CATHELS, Assoc. Inst. C.E., GAS-WORKS, MONTREAL, CANADA.

"On the proper mode of setting the retorts the prosperity of a gaslight establishment mainly depends."—*Vide Peckstone's Treatise on the "Manufacture of Gas."*

WANTED, by a young man, a situation as METER-FITTER, or in any other capacity. Aged 22. Good character.
Address E. S., 5, Pleasant Place, Brook Street, LAMBETH.

WANTED, by a respectable man, an engagement as WORKING MANAGER. Home or abroad. Can set retorts and do general repairs. Twenty years in last situation.
Address T. H., 6, Acre Terrace, New Road, BATTERSEA.

WANTED immediately, a steady man as STOKER (one used to an exhauster preferred). Wages 23s. 6d. per week, with house, fuel, and gas, &c., free.
Apply, with testimonials or references, to Mr. G. SMEDLEY, Gas-Works, BUXTON.
Buxton, Jan. 28, 1874.

GAS MAKER, &c.

WANTED immediately, an active man to make and distribute, set retorts, be a good fitter, and to do all requisites for small works in a country town.
Address, with terms and references, OAK, care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

WANTED, by the Advertiser, at present in the employ of one of the London companies, a situation as Meter Inspector, or Inspector and Collector. Perfectly understands the duties of same. First-class testimonials, &c. Security if required.
Address H. N. L., care of Mr. Larkin, 24, Bloomfield Terrace, PIMLICO, S.W.

WANTED, by a practical Man, a Situation as WORKING MANAGER of Gas-Works, where the make is from 10 to 80 millions. Uses the photometer. Unexceptionable testimonials.
Address, M. A., care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

TO GAS ENGINEERS AND MANAGERS.

WANTED, by a young man, aged 20, son of a Gas Manager, a situation as ASSISTANT MANAGER, or in any capacity where he can be useful in a Gas-Work, or in erection of works. Is a good draughtsman. Good references. No objection to go abroad.
Address T. M., 64, Bankside, Southwark, LONDON.

TO GAS ENGINEERS.

A GAS-FITTER, of unusual experience, desires an engagement at home or abroad. Well up in meters and general fitting, or can take the position of General Foreman. First-class testimonials.
Address SCOTIA, care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

WANTED, a small test Gasholder for 2½ ft. or 5 ft., with connexions complete.
State price to B. W., 4, Finsbury Road, Lodge Street, LEEDS.

COOKING AND HEATING BY GAS,
BY
MAGNUS OHREN, A.I.C.E.

GAS *versus* COAL.

Pamphlet for Gas Companies to circulate amongst their gas consumers to increase day consumption, &c.

Specimen Copy by post 4d., direct from MAGNUS OHREN, Gas-Works Lower Sydenham, London, S.E.

WANTED to purchase, 5000 to 10,000 tons of GAS COKE. Waggons can be sent to any station for any proportion of above.

Address G. J. EVESON, Gas Coal and Coke Merchant, STOURBRIDGE.

ON SALE, cheap, a Gasholder, 36 ft. diameter by 12 ft. deep, Station Meter and Governor. Also lot of 6-in., 4-in., and 3-in. Mains, all in capital condition.

Apply to A. C. FRASER, 16, St. Swithin's Lane, LONDON.

VINCENT AND CO.'S
PATENT IMPROVEMENTS IN
Apparatus for Manufacturing Gas.
Particulars to be obtained by application to—
MR. LAYARD JONES,
ENGINEER,
25, OLD BROAD STREET, LONDON, E.C.

GAS-WORKS ON LEASE WANTED.

OWNERS of Gas-Works desirous of letting them on LEASE are requested to send full particulars to E. R., 110, Strand, LONDON.

TO CONTRACTORS AND OTHERS.

THE Directors of the Newcastle-upon-Tyne and Gateshead Gas Company invite TENDERS for the construction of River Quay, Retort-House, Meter-House, Exhauster-House, Boiler-House, Purifying-House, and other works and apparatus required in the formation of the new Gas-Works at Redheugh, Gateshead.

Lithographed copies of the drawings and specifications may be had on application to the undersigned, at the Office of the Gas Company, Newcastle-upon-Tyne, on payment of £1 1s. for the general specification and 10s. each sheet for the drawings. The whole of the works need not form one contract, but contractors will be required to tender for each structure and for the ironwork separately.

Tenders to be addressed to the Directors and sent to the Company's Office not later than March 16, 1874.

The Directors do not bind themselves to accept the lowest or any tender.

WM. HARDIE, Secretary.

Gas Offices, Neville Street, NEWCASTLE-ON-TYNE,
Jan. 28, 1874.

RICHARD THOMAS & CO.,
40, GRACECHURCH STREET,
Manufacturers of
EWELL FIRE-BRICKS, CLAY, AND CEMENT.
Warranted the best quality.
WORKS AT EPSOM.

BOUCK & CO., LIMITED,
MANUFACTURING CHEMISTS,
TAR AND AMMONIA DISTILLERS, &c.,
MILES PLATTING, MANCHESTER.
WM. LITCHFIELD, SECRETARY.

CONTRACTORS for the PURCHASE of GAS TAR AND AMMONIACAL LIQUOR,
Also of their products.

WHITEHOUSE AND COMPANY, LIMITED,

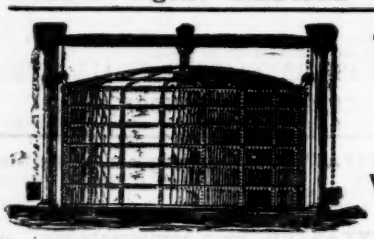
GLOBE TUBE-WORKS, WEDNESBURY; & VICTORIA TUBE-WORKS, GREAT BRIDGE, STAFFORDSHIRE,
MANUFACTURERS OF

PATENT WELDED WROUGHT-IRON TUBES,

FOR GAS, STEAM, AND WATER;

GAS-FITTERS TOOLS, STEAM COCKS, AND ALL KINDS OF JOINTS.
HYDRAULIC TUBES, CORE BARS, TELEGRAPH POSTS, COILS, &c.

London Agent—ALFRED LAKEMAN, 18, IRONMONGER LANE, CHEAPSIDE, E.C.



W. C. HOLMES & CO.,

WHITESTONE IRON-WORKS, HUDDERSFIELD
MANUFACTURERS OF
RETORTS, ANNULAR AND PIPE CONDENSERS,
WROUGHT AND CAST IRON SCRUBBERS, PURIFIERS,
GASHOLDERS,
GOVERNORS, AND ALL THE NECESSARY FITTINGS FOR COMPLETING THE ERECTION OF GAS-WORKS.
STATION & CONSUMERS WET OR DRY METERS, STREET & SERVICE MAINS, LAMP COLUMNS & BRACKETS, & WROUGHT-IRON TUBES AND FITTINGS; WROUGHT-IRON ROOFS FOR ANY SIZE OF BUILDINGS.
Sole Makers of B. W. Thurston's Combined Condensing, Scrubbing, and Washing Apparatus,
AND PATENTEES OF THE IMPROVED COMBINED CONDENSING AND PURIFYING APPARATUS SO EMINENTLY ADAPTED FOR EXPORTATION.
REFERENCES TO UPWARDS OF 300 GAS-WORKS.

JOSEPH AIRD,

WELLINGTON TUBE-WORKS,

GREAT BRIDGE, TIPTON, STAFFORDSHIRE,
MANUFACTURER OF
PATENT WELDED WROUGHT-IRON GAS, STEAM, HYDRAULIC, GALVANIZED, & ENAMELLED TUBES & FITTINGS.

FLETCHER AND MURPHY,

GARRATT STREET WORKS, OLDHAM ROAD, MANCHESTER;
Manufacturers of
IMPROVED CONSUMERS WET GAS-METERS
IN CAST-IRON CASES,
THE UNVARYING WATER-LINE GAS-METER,
AND
IMPROVED DRY GAS-METERS;
STATION-METERS OF ALL SIZES, with PLANED JOINTS;
GOVERNORS, PRESSURE AND EXHAUST REGISTERS, TEST HOLDERS,
And all kinds of Experimental Gas Apparatus.

In the Press, and shortly will be Published, Second Edition, price 7s.,

THE

GAS MANAGER'S HANDBOOK

OF

TABLES, RULES, AND USEFUL INFORMATION

FOR

GAS ENGINEERS, MANAGERS,

AND OTHERS ENGAGED IN THE

MANUFACTURE and DISTRIBUTION of COAL GAS.

By THOMAS NEWBIGGING, A.I.C.E.

The scope of this work is apparent from its title. The First Edition, published a year or two ago, was eagerly sought for, and has been now for some time out of print. The favourable reception accorded to it sufficiently proved that it supplied a generally acknowledged want in the profession. The New Edition will be published in fcap. 8vo., morocco, gilt. The work has undergone careful revision; much new matter has been added; and its form altered to suit alike the pocket and the desk. Every effort has been made by the Editor to increase its usefulness and render it worthy of the position it aspires to fill—that of an indispensable companion for all persons engaged in gas making.

TO ADVERTISERS.

Space has been reserved for the insertion of a few Advertisements of Manufacturers, &c., at the following charges:—

A Whole Page	£3 3 0
Half a Page	1 15 0
Quarter Page	1 1 0

Orders to be sent to the Publisher,

WILLIAM B. KING,

11, BOLT COURT, FLEET STREET, LONDON, E.C.

THE PATENT

"UNIVERSAL" STEAM PUMP

WAS AWARDED, AT THE

VIENNA EXHIBITION, 1873,

THE GRAND PRIZE "MEDAL OF PROGRESS."

OPINIONS

OF

THE PRESS.

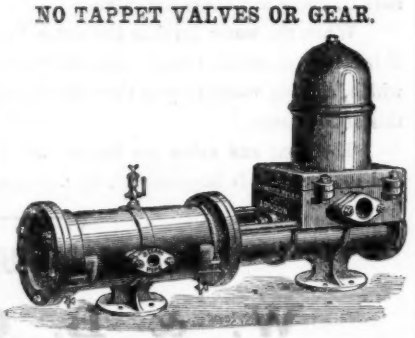
"The simplest machine of its kind."—*Engineering.*

"Remarkable for its simplicity and ease of action."—*Daily Telegraph.*

"None that we have noticed work so quietly."—*The Engineer.*

"Nothing invented in hydraulic steam power half so cheap and effectual."—*Griffith's Iron Trade Exchange.*

NO TAPPET VALVES OR GEAR.



IN USE IN SOME OF

THE PRINCIPAL GAS-WORKS IN LONDON, SHEFFIELD, PENISTONE, &c.,

FOR

TAR AND AMMONIACAL LIQUORS.

Ardwick Bridge Chemical Works,
Manchester, Oct. 28, 1872.

Sir,—The "Universal" Steam Pump obtained from you, and which has been employed during the last six months pumping caustic soda at these works, still continues working satisfactorily.

Yours truly,
(Signed) PETER HART, *Manager.*

SOLE MAKERS,

HAYWARD, TYLER, AND CO.,

84 and 85, UPPER WHITECROSS STREET, LONDON, E.C.

FOR SALE.

THE Reading Gas Company invite TENDERS for the purchase of Two 6-horse power Cornish BOILERS, with fittings complete, and a 5-horse power VERTICAL ENGINE. Also for an 8-in. STATION GOVERNOR, by Wright, with bye-pass and three valves; each are in good condition, and can be delivered on to the rails immediately.

Tenders to be delivered at my Office, on or before the 9th of February next, marked "Tender for Boilers, Engine, or Governor" (as the case may be); and, in the meantime, particulars may be obtained, or the articles inspected, by application to the undersigned.

The Directors will not bind themselves to accept the highest or any tender.

EDWARD BAKER, Engineer.

Reading Gas Company,
Engineer's Office, King's Road Station,
Jan. 17, 1874.

TO IRONFOUNDERS & CONTRACTORS.

THE Directors of the Exeter Gaslight and Coke Company are prepared to receive TENDERS for the supply of about 700 yards of 15-in., 440 yards 12-in., 989 yards of 7-in., and 200 yards 4-in. Cast-Iron SOCKET-PIPES, with such syphons, tees, and bends as may be required.

The tenders to state the price per ton at which the pipes will be delivered at Exeter, and the weight of each description of pipe per length of 9 ft. 4½ in.

The Directors will require a guarantee that each pipe has been proved with a pressure of water equal to 300 ft. in height, the pipe being struck with a 4-lb. hammer whilst being proved.

Specifications may be had on application.

The whole to be delivered free from all imperfections at Exeter on or before the 30th of April next, and sealed tenders to be sent to me, the undersigned, on or before the 16th day of February next, endorsed "Tenders for Mains."

The Directors do not bind themselves to accept the lowest or any tender.

By order,
W. A. PADFIELD, Secretary.

Gas Offices, Exe Island, Exeter,
Jan. 21, 1874.

THE Scarborough Gas Company, owing to the removal of their works, will have FOR SALE, about October, 1874, the following APPARATUS, the whole of which is in exceedingly good condition:—

Fittings for 140 Retorts, consisting of mouthpieces, ascension, saddle, and dip pipes, and hydraulic and foul mains.

A Condenser, consisting of 40 12-in. pipes, with top and bottom boxes, and inlet, outlet, and bye-pass valves.

Two Scrubbers, each 7 ft. diameter and 16 ft. high, with valves as before.

Two Purifiers, 8 ft. 6 in. square and 5 ft. deep, 20-in. water lutes.

Two Cast-iron Water-Tanks, respectively 24 ft. by 16 ft. by 4 ft., and 20 ft. by 8 ft. by 4 ft. New in 1865.

Two Horizontal Engines, 4 h. p., two single-flue Cornish boilers, and two 20,000 feet per hour Beale's Exhausters. All new in 1866.

One Station-Meter, by Milne, 0,000 feet per hour. New in 1864.

One Gasholder 80 ft. diameter, in two 24-ft. lifts. About 11 years old.

One Gasholder 50 ft. diameter, in two 22-ft. lifts. Only 4 years old.

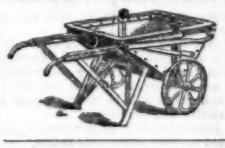
Two Governors, by Parkinson, on 12-in. and 10-in. mains.

A considerable length of 10-in. Cast-iron Socket and other Pipes.

An inspection of the above Apparatus is requested by the Officers of Companies requiring enlargements or extensions, and offers to purchase will be duly considered.

By order of the Board,
JAMES MOON,
Manager and Secretary to the Company.

PRICE'S PATENT COKE & COAL BARROW



effecting a great saving of time, labour, and expense.

For particulars, price, &c., apply to Mr. E. PRICE, Inventor and Patentee, Gas-Works, Hampton Wick, MIDDLESEX.

JAMES NEWTON & SONS,

(Established 1820,)

FIRE-BRICK AND TILE MERCHANTS,

Wholesale and for Exportation,

FALCON DOCK, 78 AND 79, BANKSIDE,

SOUTHWARK, LONDON, S.E.,

DEPÔT for STOURBRIDGE AND NEWCASTLE FIRE-BRICKS, LUMPS, TILES, and FIRE-CLAY,

and every Article suitable for

GAS AND WATER WORKS.

Now ready, price 25s., bound in cloth, lettered,

THE TWENTY-SECOND VOLUME

OF THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, AND SANITARY

IMPROVEMENT.

CLOTH CASES, GILT LETTERED,

For binding Vol. XXII., may now be obtained,

Price 2s. 6d.

LONDON:

WILLIAM B. KING, 11, BOLT COURT, FLEET STREET, E.C.

A. C. FRASER, late of the Corporation Gas-Works, Middlesborough, is prepared, after 20 years experience, to advise Corporations and Gas Companies in the Erection of new and Improvement of existing Works.
16, St. Swithin's Lane, LONDON, E.C.

MR. WILLIAM DORE (19 years Gas Engineer and Accountant) may be CONSULTED upon all matters relating to the manufacture and distribution of gas, and the management, accounts, or transfer of gas undertakings.
Office, 4, Picton Place, Neath, SOUTH WALES.

Mr. ALFRED LASS,
60, CORNHILL, LONDON, E.C.,
Is prepared to open the Books, and, if necessary, keep the Accounts of Gas and Water Companies.
To examine the Books and Accounts, and prepare Balance-Sheets for the information of Directors.
To assist Secretaries in preparing Balance-Sheets, according to the "Gas-Works Clauses Act, 1871;" or may be consulted with respect to Accounts generally.

MR. NORWOOD EARLE, late of the Dover Gas-Works, is prepared, after 17 years experience, to undertake the duties of SURVEYOR to Gas Companies and Corporations in all matters relating to the Distribution of Gas and Gas Testing. Contracts entered into for the Survey of Mains, Services, Public Lamps, &c., in order to reduce the per centage of unaccounted-for gas to the lowest possible amount.
Valuations for Assessment, Transfer, and other purposes.
Offices, MANSION HOUSE CHAMBERS, 12, Queen Victoria Street, LONDON, E.C.

TO INVENTORS AND PATENTEES.

MR. W. H. BENNETT, having had considerable experience in matters connected with Gas, Water, and Sanitary Improvement, begs to say that he continues to assist Inventors in the perfection of their designs, and to obtain for them PROVISIONAL PROTECTION, whereby their invention may be secured for Six Months; or LETTERS PATENT, which are granted for Fourteen Years.
Patents completed, or proceeded with at any stage, thereby rendering it unnecessary for persons resident in the country to visit London.
Patents procured for Foreign Countries.
Information as to cost, &c., supplied gratuitously upon application to the Advertiser, 42, Parliament Street, WESTMINSTER.

CATHELS'S Patent District Dry Gas- GOVERNOR is the only perfect self-acting contrivance for Regulating the Pressures in the higher levels of a district.
For prices, &c., apply to the Manufacturers, Messrs. GUEST AND CHRIMES, ROTHERHAM.

CATHELS & TERRACE'S Patent Four- WAY DISC GAS-VALVE is the simplest and best Valve for Purifiers, and as a By-pass for other apparatus in Gas-Works. It is always gas-tight, and has no springs, ground faces, or other delicate parts. By its use the flow of the gas cannot be accidentally stopped, and it never sticks.
For prices, &c., apply to the Manufacturers, Messrs. GUEST AND CHRIMES, Foundry and Brass Works, ROTHERHAM.

BRONNER'S PATENT GAS-BURNERS give 99 per cent. of light, as compared with 27 per cent. given by ordinary burners, with equal consumption of gas.—*Vide* "Gas Referees Report," published June, 1869.
HENRY GREENE AND SON, Sole Consignees of Brönner's Patent Improvements in Gas Lighting, 16 and 17, King William Street, LONDON, E.C.

TO GAS COMPANIES.

PATENT FUEL AND LIME CEMENT FROM GAS LIME.
This invention (protected by three patents) consists in a new method of turning the foul lime of Gas-Works to profit. The process is very simple and inexpensive, and can be worked by Gas Companies at a very small outlay.
By simply mixing the foul lime with tar it is converted in the first instance into an excellent fuel. By burning this fuel a very valuable material for building purposes is obtained, which can be used either as lime or cement or plastic. When used as cement it will be found equal to the best Portland in durability and hardness.
Licences to work the invention will be granted by the Patentee to Gas Companies on very reasonable terms.
For further particulars apply to Mr. E. MADDOCKS, Manager of the Gas-Works, KETTERING.

Just published, price 10s. 6d.,

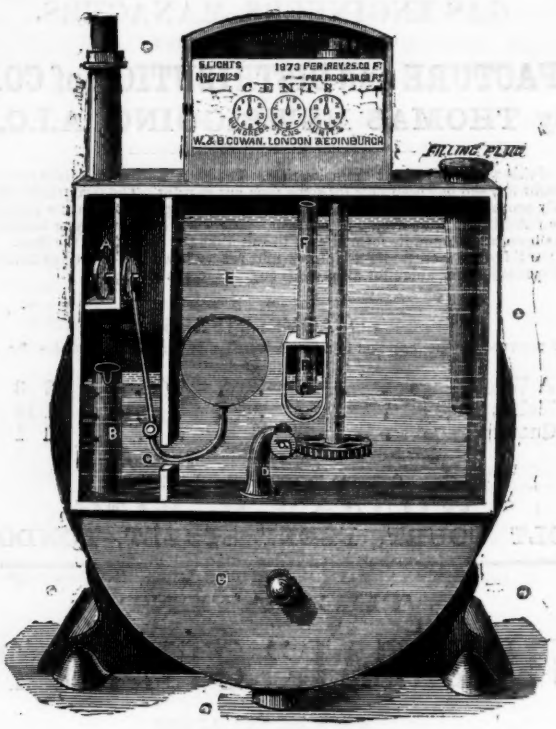
REGISTRATION OF DISTRIBUTORY PLANT.
The forms for this purpose are to illustrate the Paper on Distribution of Gas, read at the Edinburgh Meeting of the British Association of Gas Managers. By the use of the synopsis the whole of the out-door plant may at once be seen, with all matters pertaining to the same.
W. J. WARNER, Engineer.
South Shields.

BAILEY'S Patented Inventions are now in extensive use wherever steam is known. Bailey's Patent Steam Gauges, Pyrometers, Water Gauge Cocks, Test Pumps, Fusible Plugs, Steam and Water Valves, Safety Valves, Junction Valves, Pumps, Tell-Tales, Recorders, Lightning Conductors, Electric Telegraphs, Turret Clocks, Steam Joint Cement, Lifting Jacks, Boiler Feeders, Lime Catcher and Separator, Injectors and Ejectors, and every description of first-class Brass Work for Engines and Boilers. Gas-Works Managers who have not our large book should send for it.

16th edition, 1000 engravings, 4to., post free 2s. in stamps, weight 10 oz., cost of production £1000,

BAILEY'S Illustrated Inventions, containing details and prices of goods in our five several departments:—(1) Brass Foundry, Steam Gauges, Indicators, Feeders, and Fittings; (2) Engineers Sundries, Small Tools, and Stores; (3) Machine Pump and Fire Engine; (4) Turret Clock, &c.; (5) Electric Telegraph, A B Instruments, Bells, and Apparatus.
J. BAILEY and Co., Albion Works, Salford, LANCASHIRE.

ESSON'S
PATENT COMPENSATING GAS-METER,
IN TIN CASE, PATENT SIDE VALVE ARRANGEMENT.



DESCRIPTION.

The gas passes from the valve-box A by the overflow-pipe B into the waste water box C, and upwards through the spout D to the measuring drum; E is the compensating fountain, in which also is the float, the lever of which, passing through the hole G, opens and shuts the valve.

When the water level in the meter lowers, the *bottom end* of the air or gas tube F becomes unsealed, thereby admitting air or gas into the upper part of the fountain, which, causing water to pass through the hole G, restores the level in the meter, when this action ceases.

The float and valve are beyond the influence of either inlet or outlet pressure, and the fountain is large enough for a year's supply.

SOLE MANUFACTURERS,

W. & B. COWAN,

WET AND DRY GAS-METER MANUFACTURERS,

(ESTABLISHED 1827,)

King Henry's Walk,
BALLS POND ROAD,
LONDON, N.

BUCCLEUCH ST. WORKS,
EDINBURGH.

F. & C. OSLER,
45, OXFORD STREET, LONDON, W.
MANUFACTORY AND SHOW-ROOMS:
BROAD STREET, BIRMINGHAM.
ESTABLISHED 1807.
MANUFACTURERS OF CRYSTAL GLASS CHANDELIERS,
WALL LIGHTS, AND LUSTRES FOR GAS AND CANDLES.
TABLE GLASS OF ALL KINDS.
CHANDELIERS IN BRONZE AND ORMOLU. MODERATOR LAMPS.

J. & J. BRADDOCK,

GAS ENGINEERS,

GLOBE METER-WORKS, OLDHAM,

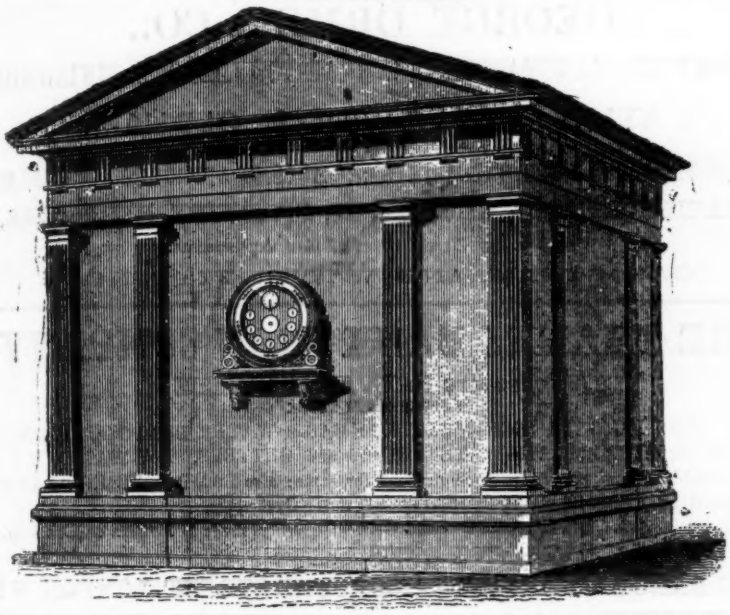
MANUFACTURERS OF

WET & DRY CONSUMERS GAS-METERS

OF THE HIGHEST EXCELLENCE;

ROUND STATION-METERS,

ON CAST-IRON STANDS.



SQUARE STATION-METERS,

WITH PLANED JOINTS.

GOVERNORS, GAUGES, INDICATORS, MAIN COCKS, &c.

GAS COOKING APPARATUS.

WATER-METERS SUITABLE FOR ALL PRESSURES.

Home and Foreign Orders promptly attended to.

All Sizes of CONSUMERS METERS, STATION-METERS, and GOVERNORS generally in Stock.

Orders almost invariably despatched on the day of receipt.

TERMS, &c., ON APPLICATION.

JAMES MILNE & SON,

GAS ENGINEERS,

Gas-Meter, Gas Apparatus, and Gas-Fittings Manufacturers,

EDINBURGH, AND

2, KING EDWARD STREET,

NEWGATE STREET, LONDON.

STATION-METERS, GOVERNORS, CONSUMERS METERS, GAS LUSTRES, CHANDELIERS, BRACKETS, &c.,

And every description of Gas-Fittings and Gas Apparatus.

GEORGE ANDERSON,

GAS AND CONSULTING ENGINEER,

19, NORTHUMBERLAND STREET, STRAND, W.C.

Mr. ANDERSON advises Companies on all matters connected with the manufacture of Gas and the construction of Works.

PATENTEE and MANUFACTURER of the following Inventions:—

RETORT SETTINGS, heated by tar without the production of smoke.

STEAM-ENGINES and EXHAUSTERS, separately or combined.

FOUR-WAY VALVES, one of which is equal to three ordinary Valves.

STATION GOVERNORS—the Gasholder cannot tilt and cause accident.

BREEZE AND TAR FUEL MACHINE.

A Pamphlet containing Eighteen Illustrations of the foregoing, with letterpress on the construction of Works, post free, 2s. 6d.

N.B.—The second edition of this Work, *now ready*, co illustrations of the Machine for converting Breeze and Tar into Fuel for heating the Retorts.

"The Author is well qualified to speak authoritatively upon the important subjects to which his pamphlet refers."—*Artizan.*

BIRTLEY IRON WORKS,

CHESTER-LE-STREET,

DURHAM.

Manufactory for every description of Casting and Machinery for Gas-Works and Water-Works.

Warehouse in London for Cast-Iron Pipes and Connexions of all sizes and in any quantity, Scott's Wharf, Bankside, Southwark.

Agent in London, Mr. J. MANWARING, 101 Cannon Street E.C.

BELGIAN CLAY RETORTS.

J. SUGG and CO., late ALBERT KELLER, GHENT.—The removal of the import duties on Earthenware permitting the entry of Clay Retorts into England, Messrs. Sugg, of Ghent, beg to draw the attention of the Gas Companies of London, and other Cities, to the very superior quality of the RETORTS manufactured by them. They can be made of any size, in one piece, and of any form. The price will be in proportion to the weight, and very moderate in comparison to their value.

Communications addressed to J. SUGG & Co., GHENT, will receive immediate attention.

HARRIS AND PEARSON,

STOURBRIDGE,

Proprietors of

BEST GLASS-HOUSE POT AND CRUCIBLE CLAY;

Manufacturers of

FIRE-BRICKS, GAS-RETORTS, & FIRE-CLAY GOODS of every description.

Orders of any magnitude, for home and exportation, executed with all possible despatch.

N.B.—A quantity of Retorts in stock. Circulars, 15 in. and 16 in. Ovals, 20 in. by 14 in. D's, 15 in. by 13 in.; 16 in. by 12 in.; 18 in. by 14 in. 20 in. by 16 in.; 21 in. by 14 in.; and 24 in. by

---

FIRE-CLAY RETORTS.

WILLIAM FRASER,

INVERKEITHING,

(Owner of the Works at which Fire-Clay Retorts were first made), can supply

RETORTS, FIRE-BRICKS, &c.,

to any extent.

References can be given to managers of above a hundred Gas-Works whom he supplies.

He ships at Charlestown his

CELEBRATED HALBEATH STEAM COALS,

on Navy List.

OXIDE OF IRON.—

We are prepared to supply, on moderate terms,

HYDRATED PEROXIDE OF IRON (BOG ORE),

Same quality as supplied by us to several of the most extensive Gas Companies, and which has given entire satisfaction.

FRANCIS RITCHIE & SONS,

BELFAST.

INTERNATIONAL EXHIBITION, 1862.

CLASS X.

PRIZE MEDAL

For excellence of Fire-Clay Gas Retorts, and "HONOURABLE MENTION" for good quality of Fire-Bricks.

WILLIAM STEPHENSON & SONS,

THROCKLEY,

NEWCASTLE-ON-TYNE.

THOMAS CARR & SON,

MANUFACTURERS OF

FIRE-BRICKS, LUMPS, TILES, RETORTS, &c., &c.,

SCOTSWOOD FIRE-BRICK WORKS,

NEAR

BLAYDON-ON-TYNE.

TO GAS COMPANIES.

GEORGE McKAIG,

MANUFACTURER OF

GAS-PURIFYING WOOD SIEVES

153, CLEVELAND STREET,

DONCASTER.

It requires but one trial to prove the Superior Make, Strength, and Durability of these Sieves.

B. CARPENTER,

THE ORIGINAL MANUFACTURER OF

WOOD SIEVES

FOR

GAS PURIFIERS & SCRUBBERS.

WORKS:

32, HERMES STREET, PENTONVILLE ROAD,

LONDON, N.

FIRE BALLS! FIRE BALLS!!

FIRE BALLS!!!

THE BEST ECONOMIZERS OF FUEL.

Apply to the Manufacturer,

W. C. GIBSON,

43, SIDE,

NEWCASTLE-ON-TYNE.

CLAYTON'S PATENT SIX-WAY VALVE only requires one valve to work two purifiers; saves more than three-fourths of the connexion-pipes; requires neither tees, elbows, nor bends; no racks or springs to get out of order.
For particulars, apply to CLAYTON, SON, & Co., Gas Engineers, Hunslet, LEEDS.

JAMES OAKES & CO.,
ALFRETON IRON-WORKS, DERBYSHIRE,
AND
WENLOCK IRON WHARF, 20 & 22, WHARF ROAD
CITY ROAD, LONDON, N.,
Beg to inform Gas and Water Companies and the public, that they keep in stock in London all the CASTINGS in general use in Gas and Water Works, including Iron Retorts, Socket and Flange Pipes, Bends, Branches, and Syphons of all sizes, Lamp Columns, &c., &c.
N.B.—Orders for Cast-Iron Tanks, Girders, Columns, Cylinders, and all irregular castings, will have immediate attention. CHARLES HORSLEY, Agent.

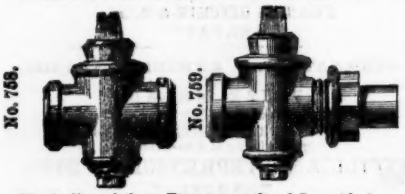
HOPKINS, GILKES, & CO.,
LIMITED,
MIDDLESBOROUGH,
SUPPLY GAS & WATER PIPES of EVERY SIZE.
Plain, Turned and Bored, and Coated.
CAST-IRON RETORTS.
Castings for Gas-Works of every description.
EXHAUSTERS.
LONDON OFFICE: 25, LAURENCE POUNTNEY LANE.

GAS AND WATER PIPES.

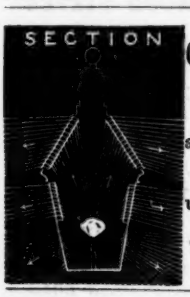
WILLIAM MACLEOD & CO.,
METAL MERCHANTS AND CONTRACTORS,
18 & 20, ALSTON STREET, GLASGOW.

CAST-IRON GAS AND WATER PIPES AND FURNISHINGS.
MALLEABLE IRON TUBE FOR GAS, WATER, AND STEAM.
AGENTS FOR THOMAS GLOVER & CO.'S
PATENT DRY GAS-METERS.
DELIVERY F.O.B. ON CLYDE.
Lists on application.

LAMBERT'S
CAST-IRON GAS-MAIN COCKS,
WITH PATENT WHITE METAL PLUGS.



The bodies of these Taps are made of Iron, black or galvanized, and the Plugs of Patent Metal. They are warranted not to set fast or corrode as do iron or brass Cocks, will always work easily, are strong, well made, durable, of little or no intrinsic value, and, therefore, not likely to be stolen; and the PRICES are (especially upon the larger sizes) FULLY 50 PER CENT. LESS THAN BRASS COCKS.
GAS-JOINTS, CHANDELIERS, PENDANTS, BRACKETS, ETC.;
WROUGHT-IRON WELDED TUBE AND FITTINGS,
BRASS, COPPER, LEAD, TIN, AND COMPOSITION TUBING,
Stocks, Taps, and Dies, and Every Description of Gas-Fitters Tools; Gas Slide and Sluice Valves;
CARTER'S SAFETY GAS-VALVES;
GAS-STOVES, REGULATORS, BURNERS, &c.
Pattern-Book and Price List of Gas-Fittings, supplied on application.
THOS. LAMBERT & SONS, Lambeth, London, S.E.



THE PATENT
CATOPTRIC LAMP
Is now in use in Moorgate Street, Cheapside, and Trafalgar Square, and has been in successful operation upon Waterloo Bridge since Oct. 7, 1871.
T. A. SKELTON, 37, Essex St., Strand, LONDON,
INVENTOR AND PATENTEE.

TROTTER, HAINES, & CORBETT,
BRETTELL'S ESTATE
FIRE CLAY & BRICK WORKS,
STOURBRIDGE.

Manufacturers of GAS-RETORTS, GLASS-HOUSE FURNACE & BLAST-FURNACE BRICKS, LUMPS, TILES, and every description of FIRE-BRICK.
Proprietors of
BEST GLASS-HOUSE POT and CRUCIBLE CLAYS.
Successors to
E. BAKER AND CO., LATE BRIERLEY HILL, STAFFORDSHIRE.

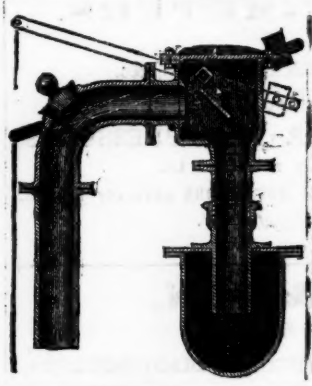
ALFRED WILLIAMS,
PHŒNIX FIRE-BRICK WHARF,
64, BANKSIDE, SOUTHWARK, LONDON, S.E.

GAS ENGINEER AND CONTRACTOR FOR THE ERECTION OF GAS-WORKS,
AND FOR THE
SUPPLY OF RETORTS, FIRE-BRICKS, CAST-IRON MAINS,
AND ALL MATERIALS FOR GAS MANUFACTURE AND DISTRIBUTION.

GEORGE ORME & CO.,
GAS-METER MANUFACTURERS, BRASSFOUNDERS & FINISHERS,
ATLAS METER-WORKS, OLDHAM.

CONSUMERS WET & DRY GAS-METERS ON THE MOST APPROVED PRINCIPLES.
STATION-METERS, GOVERNORS, PRESSURE-REGISTERS,
And every Description of Gas Apparatus.
GAS, STEAM, AND WATER FITTINGS.

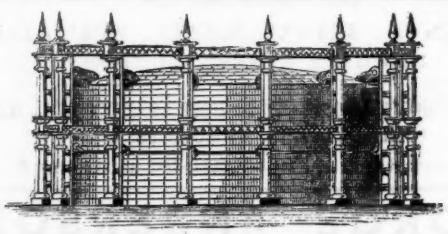
THE THAMES BANK IRON COMPANY,
(Successors to LYNCH WHITE,)
SUPPLY FROM STOCK
CAST-IRON RETORTS, SOCKET-PIPES for GAS or WATER PURPOSES, FLANGE-PIPES for STEAM, RAIN-WATER PIPES and GUTTERS, HOT-WATER PIPES and BOILERS, and all requisite Connexions for same; also LAMP-COLUMNS, LAMPS, WROUGHT FRAMES, WROUGHT-IRON TUBING, &c., &c.
All kinds of Gas-Works Apparatus and General Castings made to Pattern or Drawing.
ADDRESS—
OLD BARGE WHARF, UPPER GROUND STREET, LONDON, S.E.



BOX'S
PATENT ANTI-DIP VALVE.

By the adoption of this Valve, which is neat, cheap, and most effective, the necessity for a dip-pipe, together with liquid, in what is now the hydraulic main, is superseded, and the pressure consequent upon the dip entirely removed, a desideratum which has been sought for by so many engineers of late.
It will be seen that the Valve can be applied direct to the existing main, but should it be desired to retain the present dip-pipes, the connexion can be easily made by inserting a flanged and spigot piece, as shown in the illustration.
Prices and any other information will be readily supplied on application to the Patentee, addressed as under—
W. BOX,
GAS-WORKS, CRAYFORD, KENT.

HOPE IRON WORKS,



STOCKTON ON TEES.

ASHMORE & WHILE,
GAS ENGINEERS & CONTRACTORS,
MANUFACTURERS OF GASHOLDERS,
GAS APPARATUS OF EVERY DESCRIPTION,
Including Improved
Retort-Lids, Boilers, Cast and Wrought Iron Tanks, Iron Roofing, Bridges, Girders,
And GENERAL IRONWORK.

N.B.—Estimates for all Gas Plant and Remodelling supplied on application.

THE
HUCKNALL COLLIERY COMPANY
Can offer a CANNEL COAL yielding a large quantity of Gas of superior quality.
Prices and information on application to the HUCKNALL COLLIERY COMPANY, Hucknall Torkard Collieries, near NOTTINGHAM.

POPE & PEARSON'S GAS COAL.—We have now the authority of several of the most eminent Gas Engineers of London in stating that our Coal yields *in practical working over* 10,000 *cubic feet of gas, with an illuminating power of* 16 *candles;* or by the standard burners now used by the London Gas Companies, an illuminating power equal to 17½ candles.
One ton yields 12¼ cwt. of good coke. This Coal can be shipped from Hull, Goole, Liverpool, Morecambe, and Barrow.
For farther particulars, apply to POPE AND PEARSON, West Riding and Silkstone Collieries, near LEEDS.

LEE and JERDEIN,
COAL OWNERS & MERCHANTS.
Chief Office:
9, LANCASTER PLACE, STRAND, LONDON, W.C.
SOLE VENDORS FOR
LONDON & THE SOUTHERN COUNTIES
OF
WIGAN COAL AND CANNEL,
From the Mines of the
INCE HALL COAL & CANNEL COMPANY, Limited,
AND
Messrs. W. H. BRANCKER & Co.

CANNEL COAL.
COPPA COLLIERY, MOLD,
Beg leave to call the attention of Gas Companies to the superior quality of their
CANNEL FOR GAS-MAKING PURPOSES.
This Cannel produces in actual working, in iron retorts, 9200 cubic feet of 32-candle gas, and upwards of 11 cwt. of coke, and in clay retorts will produce 11,500 cubic feet of 25·9-candle gas.
Ports of shipment—Birkenhead or Connah's Quay.
Waggons supplied for delivery by railway to any part of England or Wales.
For particulars, prices, and rates of freight, apply to The Coppa Colliery, Mold, FLINTSHIRE.

ROBERT MARSHALL,
CANNEL COAL MERCHANT,
173, ST. VINCENT STREET, GLASGOW.

RUSSEL'S BOGHEAD.
MUIRKIRK, No. 1, CANNEL
Yields 11,600 cubic feet of 34·3-candle gas per ton, and 10 cwts. of excellent coke, containing only 5 per cent. of ash.
MUIRKIRK, No. 2, CANNEL
Yields 10,700 cubic feet of 32·77-candle gas per ton, and 9½ cwts. of coke, containing 11 per cent. of ash.
OLD WEMYSS CANNEL
Yields 12,550 cubic feet of 33-candle gas per ton.
Prices and full Analyses on application.

SCOTCH CANNEL COALS.
The Subscriber is prepared to contract for the supply of all the principal SCOTCH CANNEL COALS. Prices and Analyses of the various Coals will be forwarded on application.
JAMES M'KELVIE,
CANNEL COAL MERCHANT,
HAYMARKET, EDINBURGH.
Established 1840.

RUSSEL'S BOGHEAD CANNEL.
WOODBANK CANNEL.
SKELLYTON CANNEL.
JAMES M'KELVIE,
CANNEL COAL MERCHANT,
HAYMARKET, EDINBURGH.

ALBERT GAS COAL.
THE DERBYSHIRE
SILKSTONE COAL COMPANY,
LIMITED,
CAN OFFER A
GAS COAL
Of superior quality, delivered at any station in England and Wales.
Purified gas per ton of coal in cubic feet (average) 10·375
Weight of coke in lbs. per ton of coal 1402
Analysis and Prices on application to
MR. EDMUND TAYLOR,
SECRETARY,
ALBERT COLLIERY, NEWBOLD,
near CHESTERFIELD.

EVERY DESCRIPTION
OF
GAS COAL AND CANNEL
SUPPLIED BY
E. FOSTER & CO.,
COAL and CANNEL
MERCHANTS,
21, JOHN STREET, ADELPHI,
LONDON, W.C.
Prices Quoted on application.

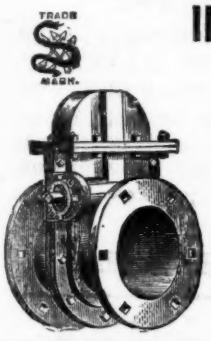
ADDISON POTTER,
WILLINGTON QUAY,
NEAR NEWCASTLE-UPON-TYNE,
Manufacturer of
CLAY RETORTS, FIRE-BRICKS, AND EVERY DESCRIPTION OF FIRE-CLAY GOODS.

E. GODDARD,
GAS-WORKS, IPSWICH,
SOLE AGENT FOR
EDGE'S PATENT
FOR REMOVING THE
CARBONACEOUS INCRUSTATION FROM GAS-RETORTS.

G. J. EVESON,
GAS COAL MERCHANT,
STOURBRIDGE.

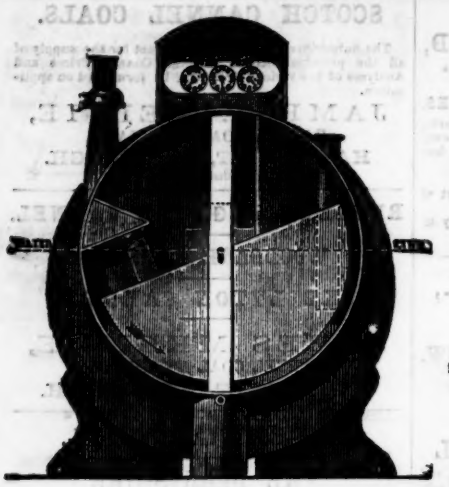
Delivery per Rail to any Part.

B. DONKIN & CO.'S
IMPROVED GAS-VALVES



WITH WROUGHT-IRON PINIONS,
List of prices, with full dimensions of all sizes up to 48-inch, to be had on application.
These Valves are all proved on both sides to 30 lbs. on the square inch before leaving the works, and are always kept in stock.
VALVES MADE WITH OUTSIDE RACKS TO ORDER.
ALSO, SCREW WATER-VALVES WITH GUN-METAL FACES.
ALSO SOLE MAKERS OF
J. BEALE'S NEW PATENT GAS EXHAUSTERS.
B. DONKIN & CO.,
GENERAL ENGINEERS AND IRONFOUNDERS,
MAKERS OF STEAM-ENGINES,
BLUE ANCHOR ROAD, BERMONDSEY,
LONDON, S.E.

DUKINFIELD CANNEL COAL.
THE DUNKIRK COAL COMPANY.
OFFICES:
ASTLEY DEEP PIT, DUKINFIELD.
ANALYSIS, PRICES, AND OTHER INFORMATION, ON APPLICATION AT THE ABOVE OFFICES.



THE

UNVARYING WATER-LINE GAS-METER.

(SANDERS AND DONOVAN'S PATENT.)

"Unquestionably the best Water Gas-Meter now in use."—Thos. G. Barlow, C.E.

Over 90,000 in action.

MANUFACTURERS:

THE GAS-METER COMPANY,

KINGSLAND ROAD, LONDON;

WITH

Branch Manufactories at DUBLIN and OLDHAM.

ALEXANDER WRIGHT & CO.,

MANUFACTURERS OF

"WET" & "DRY" GAS-METERS

of the highest excellence.

STATION-METERS AND GOVERNORS.

STREET-LAMP REGULATORS.

TESTING APPARATUS

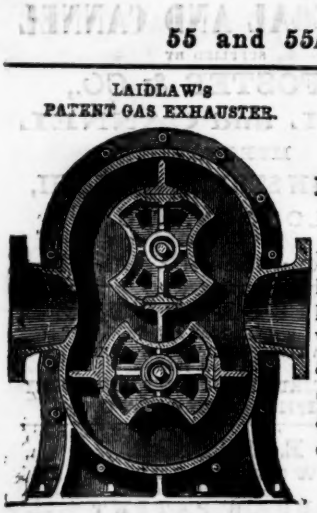
of the most perfect description for all purposes relating to Gas.

NOW READY.

"GAS MEASUREMENT AND GAS-METER TESTING," by F. W. HARTLEY, A. Inst. C.E. Third Edition, cloth boards, 2s.; per post, 2s. 2d.

55 and 55A, MILLBANK STREET, WESTMINSTER, S.W.

LAIDLAW'S PATENT GAS EXHAUSTER.



R. LAIDLAW & SON,

GAS ENGINEERS, CONTRACTORS, IRON & BRASS FOUNDERS,

Iron-Works and Foundries, GLASGOW,

Meter-Works & Brass Foundry, EDINBURGH,

Manufacturers of GASOMETERS & GAS APPARATUS of EVERY DESCRIPTION; CAST-IRON PIPES, all sizes, cast in DRY SAND and VERTICALLY by PATENT MACHINERY; IRON ROOFS, COLUMNS, BEAMS, & GIRDERS; BOILERS, TANKS, & CISTERNS; VALVES, Screw, Rack and Pinion, &c., for Gas and Water, with Iron or Gun-Metal Facings, &c.; WROUGHT-IRON TUBE and FITTINGS for Gas, Water, or Steam; GAS-METERS (Wet and Dry) of the most approved Construction, STATION-METERS, GOVERNORS, &c.; GASELIERS, BRACKETS, PENDANTS, PILLARS, & GAS-FITTINGS of every description; LAMP-POSTS and LANTERNS for Streets, &c.

London Address: 106, CANNON STREET, E.C.

D. HULETT and CO., 55 and 56, HIGH HOLBORN, LONDON,

PATENTEES and MANUFACTURERS of the ONLY GOOD MERCURIAL GAS REGULATOR,

Invite the attention of Gas Companies and the Trade generally to their Improved GAS-METERS, which they warrant equal to any in Quality, Workmanship, and Simplicity of Construction, and the only Meters from which Gas cannot be obtained without being duly registered.

MANUFACTURERS OF

GAS CHANDELIERS, GLASS LUSTRES, HALL LANTERNS, VESTIBULES, BRACKETS, PENDANTS;

DOUBLE CONE, ALBERT, SHADOWLESS, & EVERY DESCRIPTION OF BURNER, UNION JETS, BATSWINGS, ETC.;

IMPROVED FULL-WAY CARTER'S VALVES (much approved of);

GAS-STOVES, and every article connected with Gas Apparatus.

CAST & WROUGHT IRON PIPE, BLACK & GALVANIZED. COPPER, TIN, BRASS, & COMPOSITION TUBING.

D. HULETT'S IMPROVED SERVICE CLEANSER

for clearing out Mains, Services, and Interior Fittings—65s. net.

Boyle's Patent Silvered Glass Combination Reflectors and Outside Lanterns.

Sole Manufacturers of Church and Mann's Photometer.

Large Pattern-Books, with every description of Gas-Fittings, Chandeliers, &c., with complete Book of Prices, 12s.

London: Printed by William Boughton King (at the office of Clayton and Co., 17, Bouverie Street, Fleet Street); and published by him at No. 11, Bolt Court, Fleet Street, in the City of London.—Tuesday, February 3, 1874.